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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*On the Operative Treatment of Hare-lip.* By W. I. WHEELER, M.D. & M.Ch., Univ. Dúbl.; Fellow, Licentiate, and Member of Council, Royal College of Surgeons; L.K.Q.C.P.I.; Surgeon and Lecturer on Clinical and Operative Surgery to the City of Dublin Hospital.

As unusually large numbers of cases of deformity of the face have come under my care, the subject has received my especial attention. I purpose, therefore, in this paper to relate some of my experience, but intend to restrict myself to the description of that congenital deformity known as hare-lip (or *Labium Leporinum*)—detailing from the single or unilateral kind to the double or bilateral, with the most aggravated complications—relating the most interesting selected from a large number, all successfully operated on, where life was preserved, and the distorted parts placed in their normal position by operative interference and surgical skill.

I do not purpose entering into any lengthened prefatory discourse on the development of the face—such would be unsuitable to this my paper, and can be read in the elaborate descriptions of various writers, as Kölliker, Dr. J. Hamy, Professor Weber, M. Costa, Mr. Callender, Reichert, &c.—but I will only give such an epitome of the development of the parts implicated in the various forms of hare-lip as will make the origin of the deformities and the operative procedure for their restoration more intelligible

and more interesting to those who may not have specially turned their attention to embryology.

Taking it for granted that my readers know that the different parts of the jaw arches, and hyoid apparatus arise in the form of lateral bars or processes beneath and in front of the axis of the cranium, we need only, for our present purpose, confine our attention to those parts of the visceral arch apparatus which contribute to the outward form of the face. These we find to be the foremost two of the paired lateral processes connected with the first visceral arch, together with one median unpaired process; the former are known as the upper and lower maxillary processes, the latter as the nasal process. This median portion is really the expanded continuation forwards of the axial part of skull basis, which extends in the mesial line as the cartilaginous septum of the nostrils, and lies below the anterior cerebral vesicle. This median process is at first broad and thick, and becomes modified into its well-known permanent condition of a thin median lamella. The foremost part of this septum extends into the face, appearing in the region of the premaxilla as a broad projection notched in the middle, on whose sides arise the bony lamellæ of the vomer; and, according to Mr. Callender, the premaxillary bones are also developed in the membrane which covers the anterior part of this internasal cartilage.^a The front border of this middle process is the internal nasal process, which limits internally the external opening of the nostril. From the side wall of the base of the skull there is continued downwards the external nasal process, in which the different parts of the outer wall of the nasal passages develop, and whose foremost part forms the cartilaginous and other structures of the nasal alæ, and this, blending with the internal frontal process over the nostrils, completely roofs in the anterior nasal opening.

The maxillary process connected with the first post-oral visceral arch projects forwards, beneath the site of invagination of the eye vesicle, and approximates to the outside of the external nasal process with which it unites, leaving between them the nasal duct.^b At first this maxillary process is but a moderately slender bar lying external to the combined mouth and nose cavity; by degrees its under-edge grows inwards beneath the lateral nasal process, and gradually approaching the under-edge of the middle or septal nasal

^a Phil. Trans. 1869.

^b Recent researches have been made on the relationship and mode of origin of this duct by Dr. G. Born, of Breslau. Gegenbaur's Morph. Jahrbuch, 1879. P. 481.

process, with which it finally coalesces, thus shutting off the two narial passages from the mouth for which these ingrowing shelves form a roof—the palate; and thus the cavities of smell, which at first were two wide and shallow pits along the roof of the buccal cavity on each side of the middle or septal nasal process, become shut off from the mouth. This process of shutting off begins before the end of the second week, and from about the eighth week these palatal lamellæ blend or coalesce from before backwards, joining with the lower edge of the septum narium.* In the ninth week the hard palate is completed in the human foetus, and the lateral soft lamellæ posteriorly, which afterwards form the soft palate, rapidly coalesce, so that by the second half of the third month the velum is formed, and the uvula has appeared.

The nasal bones arise as splints on the front part of the skull above the union of the internal and external nasal processes; the lachrymals cover the space above the union of the maxillary and external nasal processes, and these ossify at the beginning of the third month, thus being, as it were, marginal splints of the ethmoid.

The human premaxillæ arise, as has been already stated, as splint bones on each side of the lower part of the middle nasal process, but join very early to the maxillæ, which form as splints on the surface of the maxillary processes. In embryos of the first half of the third month the premaxillæ are separate from the maxillæ, except on the facial surface, where the latter overlap them. During the eleventh and twelfth weeks union proceeds rapidly on the lateral and anterior aspects, so that only a fissure on the palatine side indicates the separation of these bones. This fissure may persist even in adolescent skulls, and may be found widely gaping in the cases of double hare-lip, with the “wolf’s pharynx,” in which the upper maxillary palatine processes remain separate, not only from the premaxillæ, but from the middle nasal process. And hence the incisor teeth (which develop in the premaxillæ) appear in a median piece of bone attached to the internal nasal process, quite separate from the lateral palatine process of the maxillæ. Mr. Bryant relates an interesting case, wherein the patient, a child, was suffering from

* It is interesting to notice that in different animals the degree of blending of these processes medially is a variable one; thus in the human and many other embryos the lateral palatal lamellæ of the superior maxillary process unite with each other below the nasal septum which comes in contact with them above, while in whales the septum which retains its embryonic breadth projects on the roof of the mouth between the two palatal lamellæ.

necrosis of the upper jaw. The portions of bone removed proved to be the intermaxillary.^a

From my foregoing epitome it can readily be seen at what an early period of intra-uterine life union should take place between the parts of the mouth, and it can easily be understood that the want of this union of the soft parts covering the intermaxillary bone and that covering the superior maxillæ on one side constitutes single hare-lip—on both sides, double hare-lip; and if the intermaxillary remains ununited, it is usually brought forward by the cartilaginous septum, or the vomer to which it is attached, constituting the double hare-lip, complicated with projecting intermaxillary bone. If the palatal lamellæ do not unite, we have the still further complication of split palate—either the hard palate alone or in part, or the soft palate alone or in part, or both—dependent on the amount of union of the palatine plates.^b Such want of union is then the reason of these varied deformities; but whether these imperfect formations are excited by impressions from without, or an hereditary predisposition, I am not prepared to discuss. I have known several members of the same family to have been the subjects of this affliction. I saw a mother and her infant child both operated on for double hare-lip by Mr. Butcher, in Sir Patrick Dun's Hospital; the cases are reported by him in *The Dublin Journal of Medical Science*, Vol. LXV., May, 1877, p. 403. Mr. Liston operated on four of the same family (*Medical Times and Gazette*, 1865, Vol. II., p. 333). In *The British Medical Journal* of April, 1863, a writer states that hare-lip has been hereditary in his family for at least a hundred years. Dr. Bellingham describes hereditary cases in *The Dublin Medical Press* of 1855.

I shall now give a brief outline of a few of the cases operated on by me; the Plates have been lithographed by Messrs. Forster, and the deformities and operative results most correctly delineated.

CASE I.—R. D., aged twelve months, an intelligent, handsome, and well-nourished boy (the third child born of healthy parents, who suffered from no deformity whatever), was admitted, under my care, into the City

^a Path. Soc. Trans. Vol. X.

^b A case of double hare-lip, complicated with protruding intermaxillary bones, and cleft, hard and soft palate, came under my notice a year ago, the tongue being also cleft from near the root, through its entire length and thickness. The child died of convulsions at three weeks old, without operation. This case is exceedingly remarkable, as there is no apparent reason why the tongue should have participated in the fission.

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of Dublin Hospital, recommended by my friend, Dr. Trimble, of Castle-bellingham, on the 8th May, 1876, suffering from single fissure in the soft parts of the upper lip, on the left, complicated with separation of the intermaxillary bone and superior maxillary of the same side. The nose was widely spread, being more stretched on the right side than on the left; the tip was much depressed; the vomer was not in any way abnormal as to thickness at its nasal extremity. When the child laughed the deformity was immensely increased, and painful to look at—the alæ of the nose spreading considerably over the face, and the fissure in the lip being nearly four times wider than when in the quiescent state.

On the 16th May I proceeded to operate as follows:—The child having been wrapped up in a sheet encircling the body, and which kept its arms closely approximated to its sides, was placed on the lap of an attendant, its head resting against the left breast and shoulder, which an assistant behind steadied, seizing the child with his hands on each side of the skull. I now applied (as is my custom) my arterial spring compressors on each side of the cleft in the lip, as far from the fissure as possible. By this means the coronary arteries were completely controlled, and the operation rendered almost bloodless. And now I rapidly, and with a thin-bladed scalpel, separated the right side of the lip from its attachment to the protruding maxillary bone and the right superior maxillary. I next freed the left side of the lip from its corresponding bony attachments, and with a strong forceps bent the maxillary bone towards the left upper jaw. It came admirably towards its allotted and natural position. Then, raising the gums from the premaxillary process and superior maxillary bone, I stitched them across the narrow osseous slit, and drew their freshened edges together by means of three points of catgut suture. This completely and efficiently filled up the gap in the bony structures. And then, holding the lip in a toothed forceps, I cut off the fissured red margins with my own scissors (seen at Plate 15), the advantages of which I shall hereafter relate. The parts came most accurately together; but the nose not elevating at the tip, I notched the septal cartilage at its attachment to the vomer, and it at once rose. Now I brought the parts together by means of three fine hare-lip needles, putting in the lower needle first, through all structures save the mucous membrane, entering it about three-quarters of an inch from the edge; and with threads of silk, cast round the needles separately, the parts were brought into beautiful apposition—great care being taken to apply the lower needle so as to guard against the notch forming in the red border.

The arterial compressors were now taken off, and the ends of the needles removed by a cutting pliers. Some small strips of adhesive plaster were carried between the needles, the entire being brushed over with flexible collodion, and a large piece concave forward towards the

mouth, attached from one malar bone to the other beneath the chin, the soft parts having been pushed forward towards the mouth before its final adjustment. By these means all the parts were steadied, and the action of the muscles of the face limited. The child was now taken from the operating theatre, and half a grain of pulv. ipecac. c. opio administered with sugar. He soon after fell asleep; and awaking in about an hour and a half, took some heated milk, and quickly went to sleep again.

May 17th.—Doing favourably, the child taking food and sleeping.

On the 19th, seventy-two hours after operation, I removed the needles with a rotatory motion, having first oiled their extremities. The suture remained on the lip, and fresh plaster was applied. On the day after but one I took off all the dressings. The union was perfect. The red margins of the lips could not be more even, so exactly were they adjusted by the manner the lower pin was introduced. The nose was elevated, and ceased to have the disfigured, spread appearance depicted before the operation. The gums had also joined, filling up the space between the bones.

Notwithstanding the accuracy of Plate 1, taken from a photograph, it does not at all portray the immense improvement there was in the child's countenance—before inert and stupid, after the operation expressive and intelligent. He was discharged from hospital on the 3rd June, with scarcely a trace of deformity, less than one month from his admission.

CASE II.—Esther C., aged three months, residing in a lane near Meath-street, Dublin, was admitted, under my care, into the City of Dublin Hospital, in November, 1875, suffering from single median hare-lip. A heavy, drowsy-looking child, with feeble circulation; much inclined to sleep; her nose was greatly flattened and dragged towards the right side, the septum being slightly displaced in the same direction. When the head was thrown a little back the lips looked enormously thickened, and appeared even more so than they were, on account of the child continually protruding its tongue and pushing the lips outwards.

On investigation I observed this little patient, who had been bottle-fed almost from birth, was suffering from frequent attacks of diarrhoea and aphthous ulceration of the tongue; and immediate operative measures being consequently out of the question, I placed her on constitutional treatment, and regulated the quality and quantity of her nourishment. After a little time she was able to take cod-liver oil and iron. The improvement was slow and gradual, and it was not until the 4th January, 1876, that her health was sufficiently established to operate. Having been rolled in a sheet, as the former case, and steadied by an assistant, I applied the arterial compressors as before mentioned, and detached the soft parts from the maxillary bone, more on the right side

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than on the left, getting up beyond the right nasal ala. This was necessary to relieve the additional deformity existing on this side. Having liberated these parts sufficiently, I passed the blades of the scissors between the nostril and snipped the septum. I had two objects in this—first, to allow the nose to come towards the left side, and second, to elevate it. Now, seizing the margins of the cleft with a toothed forceps, with my curved sheath-billed scissors I quickly revived the edges. Not a drop of blood came from the coronary arteries, so perfectly were they compressed, nor was any blood lost save that which oozed from those parts separated from the maxilla.

I now drew the edges together, but commenced superiorly—such is the way I have frequently adopted in cases with much nasal deformity and widening—passing the needle from the right about three-quarters of an inch from the edge of entrance, and one-quarter from the side of exit. I was thus enabled by this plan to bring the nose into good position—the soft structures being more separated on the right, as before described, came freely over to the required place.

A second needle was introduced lower down. The third at the lower border brought the labial edge into beautiful apposition. This needle was entered from left to right, obliquely downwards, as the former, or left edge, was on a slightly higher level than the opposite one. A silken thread was now carried round each needle separately and fastened, narrow strips of plaster over all, and the large encircling piece before described was applied; also a small piece just above and across the end or tip of the nose to control its action, for by being thus set free the pyramidalis nasi and levator labii superioris aëque nasi muscles, acting too strongly, pulled greatly on the nose. By this means they were controlled, and the entire was painted over with collodion, a suitable anodyne was administered, the child slept for several hours, and on the 8th of January, ninety-six hours after the operation, I removed the needles and plaster, reapplying the latter over the suture which remained; the piece on the nose was also reapplied. On the 11th all dressings were removed, fibrous material joined the slit in the septum, which enabled the nose to assume its natural position.

Nothing could be more admirable than the manner in which she progressed to a result in which scarcely a trace of deformity was evident. There was no pouting of the lower beyond the upper lip, the red margin was as even as if it had never been fissured, and a narrow line, not more than the width of a hair, alone indicates where the structure amalgamated (*vide* Plate 2). On the 14th January the child was discharged from hospital.

This form of hare-lip, where the fissure is exactly in the middle, is exceedingly rare, and is the natural state in the animal from

which the deformity is called. The late Sir W. Fergusson and Mr. Butcher, whose experiences on this subject are considerable, have not seen mesial fissure. Dupuytren and Cruveilhier think it to be impossible, whereas such a case is described by a Mr. Hazard in the *Medical Times* of 1864. MM. Talin and Dupley relate such cases. Blondin has observed it in the embryo. M. Nélaton saw two such examples in the Museum of Strasburg. Nicati saw a child over two years of age in whose superior lip there was a fissure exactly mesial (*De Leporini Labii Naturâ et Origine*). The one I have just described adds another instance of this unusual form.

CASE III.—James H., aged five weeks, recommended by my friend, Dr. S. Murdock, was admitted into the City of Dublin Hospital, under my care, on the 18th June, 1874, suffering from single hare-lip on the right side, complicated with separation of the right maxillary bone.

The right side of nose was terribly drawn down and distorted, as shown in Plate 8, adding much to the deformity. On the 25th of June—the child being rolled in a sheet after the manner of the cases already described, and seated on the lap of an attendant, its head being steadied from behind—I rapidly detached the gum on each side of the cleft, and bending back the bone, which I partially cut by means of the forceps known as Mr. Butcher's, and so graphically described in his "Operative Surgery," I next sutured the edges of the gum with catgut ligature, and quickly with a narrow knife freed the soft parts from their osseous attachments, passing the blade of the knife well up in the right side to set free and allow elevation of the nostril. I next cut the edges of the lips with the scissors, having first applied the arterial compressors, and dexterously brought the cleft together by means of needles and twisted suture, passing in the lower one first about one inch from the edge of the lip, and bringing it out at the other side at the same distance from the margin as that of the entrance. There was a tendency to elevation of the central part of the cleft, so I passed in the other two pins used in this way: I entered one from the left side from below upwards, and the other on the right side from above downwards, decussating one another at the point where there was tendency to elevate. The one on the right side assisting to elevate the nose, silk ligature was carried round the lower pin, bringing the prolabium into exquisitely even apposition, and round the rest from one to the other the same kind of suture was employed, the ligature being used in abundance, so as to press on the part which seemed inclined to raise, and also that a pad, as it were, would be over this point where the plaster could press on it. The ends of the needles were now cut off, one point of interrupted suture was found to be necessary close to the nostril, and the compressors being

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removed, the entire was painted over with collodion, and narrow strips of plaster drawn across; also a large piece from each malar bone beneath the chin, such as was used in Case II., thus limiting muscular action. A sedative was administered, and the child fell asleep. Nothing could do better than this case; the little patient partook of its nourishment well, and on the fourth evening from the operation, seventy-eight hours after, I removed the needles, and placed fresh strips of plaster over the ligatures, which remained, as is their wont, and fell off usually at the second dressing. Three weeks after the operation there was scarcely a mark perceptible; a mere line delineated where the joining took place; the nasal ala on the right side raised and corresponded with the left; the gums joined and filled in the open between the bones. The altered appearance of the child, as represented in Plate 3, denotes faithfully the improvement. The boy left hospital on the 24th of July, 1874.

CASE IV.—Richard R., aged six months, was admitted under my care on the 9th October, 1876, recommended by my friend, Mr. Patten, now resident surgeon of the hospital.

He was born of healthy parents, whose previous children were not afflicted with any deformity. This was a handsome boy, with large brilliant eyes, high forehead, and a most animated countenance. He suffered from a division of the upper lip to about half its extent towards the right side, with depression of the right nasal ala. The maxillary bones were completely united, and the gum was perfectly even.

On Saturday, the 14th October, I proceeded to operate after this manner, the child having been rolled in a sheet, and placed on the lap of an attendant, an assistant steadying the head:—

In order to allow the nose to elevate, I first passed up a narrow-bladed knife beneath the lip towards the right side, and separated from their osseous attachments the parts holding depressed the right ala, and carried my knife up and across to the left side, even to the septum narium. By this means I effected my object in getting the nose to rise. I now made a semicircular incision above the separation in the lip, which left a diamond-shaped space, and pulled down this cut portion to form the prolabium (or red margin), and then brought the surfaces of the gap left above into apposition by means of two fine needles, round which a silken ligature was carried as in the figure of 8 or twisted suture, taking care that the lower pin lightly traversed the superior edge of the portion of the fissure pulled down. It is necessary to observe this latter point, or undue protrusion of the marginal portion of the lip will occur at the part where the fissure has been lowered. Two narrow strips of plaster were fitted between the needles and brushed over with collodion; a third held a small pad of lint placed at the right side of the nose. This corrected its depression, before noticed.

The child was now removed to its ward, and restored to the care of its mother. One-fourth of a grain of Dover's powder being administered, he fell asleep and awakened not for two hours and a-half. He then took milk freely from a bottle, and it was surprising to witness the improvement in his manner of sucking.

The needles were removed on the morning of the 17th, seventy-four hours after operation. The suture, as is usual, remained, and fell off at the next application of plaster on the 18th inst. The result was perfect. No mark whatever could be seen, save the smallest seam where the parts were brought together by the needles. This, I have been informed, is not now visible at all. The nose rose and continued in the position desired for it.

Plate 4 accurately represents the conditions of the child before and after the operation. The latter was taken from a photograph sent to me by its mother. The little patient left hospital on the 23rd October.

The above operation is accredited to M. Nélaton, and is suitable to cases where the cleft does not extend into the nostril. I have also practised it with advantage in a case operated on (not by me) some years ago where a considerable notch remained in the lip.

This method of operating, however, is not suitable for every case where the fissure does not include the entire lip. A case now under my care in the City of Dublin Hospital, a boy of twelve years of age, sent to me by Mr. Irwin, a surgical student (now Licentiate of the College of Surgeons), presented the same appearance as that seen in Plate 4; yet the operation just described would have been entirely inapplicable, inasmuch as the connecting medium in the upper undivided portion of the lip was thin and undeveloped, and would not have filled up the space below. The operation—to my mind most exquisite for suitable cases—would much disappoint the operator were he led to perform it in such as I have mentioned. M. Nélaton does not lay down this most important warning in his description. In such cases the undeveloped portion had better be removed, and the curved scissors, as seen in Plate 15, will probably be the best instrument to use; a slight separation of the soft tissues from the bones may be necessary. I adopted this course in the boy alluded to; the success was all I could wish for. No attempt should be made to join the lower portion by the simple refreshing of its margins. Should the surgeon fall into this error he will cripple the connecting part above, and undoubtedly have the marginal notch.

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CASE V.—Teresa S., aged two months, was admitted into the City of Dublin Hospital, under my care, in November, 1874, recommended by my surgical dresser, Mr. (now Dr.) Finucane, suffering from single fissure of the lip almost in the median line, but slightly to the right side, also a cleft in the maxillary bones, where the left premaxilla had not joined to the corresponding superior maxilla. The child was irritable and cross, and had much difficulty in taking nourishment. On the morning of the 14th November, 1874, I operated, having rolled the child in a sheet, as in the preceding cases. First I detached the gum from the sides of the cleft in the maxillary bone and freshened the edges, and drew the revived gums across the opening, and carefully brought the edges together with three points of carbolised catgut, having first bent the projecting portion of the bone toward the left side. I now placed the arterial compressors on the sides of the lips far from the cleft; and, separating the soft structures from their bony attachments, I cut the edges of the cleft with the scissors, holding the portions to be severed in a toothed forceps. Not a drop of blood was lost, save the small quantity that wept from the gums before they were brought together. I now carried a needle from left to right through the labial cleft, close to the red margin, about three-quarters of an inch from the edge, and passing through all structures save the mucous membrane, was brought out at the opposite side at a similar distance. Two other needles were introduced in like manner, and silken suture carried round each point, and afterwards from one to the other. Plaster was next applied, after the manner I have mentioned in the other cases. Never did parts come more exquisitely together than in this case. A mixture containing one-grain doses of bromide of potassium was ordered to be administered. The child soon fell asleep, and on waking, in two hours and a half after the operation, took its nourishment greedily and with much improvement, compared with the way it was able to do so before.

On the 15th November doing well; the bromide mixture most suitable, and seems to appease the irritability of the child. On the 16th still going on favourably. On the evening of the 17th I removed the needles, eighty hours after the operation, having first oiled their extremities and placed the child under the influence of chloroform before their withdrawal. Small pieces of plaster were put across the lips. On the day after but one fresh strips were readjusted. The sutures which had remained after the needles came away. It was most gratifying to witness the result; nothing could be more admirable. The union was perfect throughout; the red margins were as if welded together where the union had taken place, as shown in Plate 5.

On the 11th of January, 1875, six days after the child left hospital, I received a letter—part of which I quote—from her mother, expressing

her thanks for the treatment, "and for the very successful operation you performed on her. I did not expect it could be ever brought to such perfection. The child is getting on very well."

CASE VI.—Mary M., aged three years, recommended by my friend, Dr. Ebbs, was admitted into hospital, under my care, on the 6th December, 1875, suffering from double hare-lip of a most aggravated form, with projecting intermaxillary bone attached to the vomer, and thrust towards the right side containing the central incisors; the right portion of the nose was pulled down and depressed, and the tip carried downwards with the bones; the soft palate was perfect, and the hard, save just behind the opening made by the protruding ossa incisiva. A more complicated case cannot be well imagined—the labial fissure admitting the width of two fingers; the central soft portion was small, and freely attached to its osseous relation; the middle bony piece was about one inch long, in width three-quarters of an inch; the vomer was much expanded, and thickened where it joined the intermaxillary bones; when she drank, the fluid ran out of the mouth at the sides.

On Tuesday, the 14th December, I operated as follows:—The child being rolled in a sheet, and the legs tied together, was placed on the operating table. I seized the fleshy middle portion, and quickly detached it from the intermaxillary bone; and next raised the margin of the gums from the maxillary and intermaxillary bones, bending back the protruding ossa incisiva with the forceps invented by Mr. Butcher for that purpose, and pictured in his great work. I previously had cut a wedge from the thickened vomer, close to its junction with the intermaxillary bones, with the forceps pictured in Plate 15. An interosseous suture held firmly the bones on each side; the edges of the gums were kept together by interrupted suture. Now seizing the left portion of the lip, near to its inferior red margin, I raised it, and with a narrow-bladed scalpel directed it upwards, keeping close to the bone. The same procedure was adopted on the right side. There was smart hæmorrhage from the central piece beneath the soft structure, which I had considerable difficulty in arresting—indeed the vascularity of this part was so increased that there was a general weeping, which I eventually stopped by points of heated wire. I next cut the sides of the central piece, suiting it for a columna, and then the margins of the lips with one stroke of the scissors; an assistant compressed the facial artery, standing behind the patient. There was a burst of arterial hæmorrhage, which was quickly controlled, and I rapidly proceeded to adjust the parts.

Piercing the upper portion of the left with a long needle, I traversed all its structures except the mucous membrane, passing the needle through the lower pointed extremity of the central piece, which I carried back to form a columna for the nose. Continuing the course of the needle, I projected

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it through the right side, about an inch and a half from the cut surface, same as at the point of entrance. Great care was taken not to drag or depress too much the central portion, in dread of pulling down the nose; a second pin was introduced lower down, and a third at and close to the red margin. Silken suture was now carried round each needle separately, and a point of interrupted suture was put between the middle and lower needles. The entire was brushed over with collodion, and narrow strips of plaster placed between the needles, and a broad piece (concave) brought forward from one malar bone to the other beneath the chin. This child suffered much from the shock of the operation, which was a severe one. She collapsed on the table, and I had to adopt the most active measures to restore her. Nutritive enemata were administered, her feet were elevated, mustard sinapisms applied over the heart, friction to the body, and brandy and water in teaspoonfuls poured down her throat. It was not for three hours after the operation I considered it safe to remove her from the table she was operated on. She then got some milk and brandy, with a few drops of laudanum, and fell asleep. At 7-30 p.m. of this evening she was hot and feverish; pulse 150; temperature 101°. There was no undue tension or swelling of the parts, and she partook of more than half a cupful of milk—a few drops of laudanum being again administered.

15th.—Had a quiet night; pulse quick, 140 per minute; child irritable; parts greatly swollen; both eyes closed, and ecchymosis under left; drank milk and beef-tea during the night, and a few teaspoonfuls of wine and water. Ordered two grains of calomel; beef-tea and milk continued, and laudanum in mixture, with bromide of potassium in suitable doses. A cold lotion was applied over her eyes and nose; passed a quiet day, and took nourishment. Bowels acted on during the night twice; swelling of face less; right eye open; not so irritable; taking nourishment well; great tension on middle needle, in consequence of which I gave the child a few whiffs of chloroform, and removed the needle, having cut the suture and introduced another, readjusting fresh silk around it.

17th.—Much improved; left eye open, ecchymosis less; not so irritable; temperature this evening, 99° F.; mixture of opium and bromide of potassium continued.

18th.—Passed a good night; slept well, and took nourishment at intervals. On this day, at 12 o'clock, I placed the child under chloroform, and having oiled the end of the needles I withdrew them with a rotatory motion—first the lower one, then the middle, and then the upper; and as I withdrew each needle I took the precaution to adjust a piece of plaster, not waiting till all the needles were withdrawn.

19th.—Doing well.

20th.—I readjusted the plaster; the silken suture fell off; I removed the point of interrupted suture; union was complete and perfect

throughout; the central piece had beautifully united, forming a columna for the nose, which duly elevated; and the red margin of the lips was accuracy itself, as shown in Plate 6. All was healed but the mark produced by the pins. The two points of interosseous suture were removed the day after. The central bony piece was fixed and firm.

The child left hospital on the 26th January following.

CASE VII.—John O'C., a well-grown child, aged five months, recommended to me by Dr. Finucane, was admitted into the City of Dublin Hospital on Oct. 8th, 1877, suffering from single hare-lip on the right side, with cleft in the maxillary bone of same side, and also cleft hard and soft palate. The fissure between the divided lip was more than an inch in width; the marginal portions being much thickened, the nose was terribly distorted; the right nasal ala was pulled over to the same side, as well as the tip of the nose, whereas the left ala was much widened, spread, and flattened. The separation in the maxillary bone was not more than three-quarters of an inch. When milk was administered to the child, a large portion of it passed through the fissure back, and not infrequently regurgitated through the nose.

On the 16th October I operated, preparing the child in the usual manner. I proceeded to detach the gums from the edge of the gap in the maxilla, and freshened their margins. Then with a strong forceps I bent the left projecting portion of the bone towards the right side, and with two points of interrupted suture retained the gums; across the opening I now applied the arterial compressors, and seizing the lower margin of the lip at the right side in a toothed forceps, I rapidly freed it from its osseous attachments, keeping very close to the bone, freeing it well beyond the level of the depressed ala depicted in Plate 7. I then freely loosened the left side from the maxilla, keeping, as before, close to the bone, but did not separate it to such an extent upward, and then cut the septum, taking a small wedge-shaped piece from it to allow the nose to elevate. All was now completed but to remove the edges of the lip, which was quickly done by one stroke of the straight scissors. Not a drop of blood escaped from the coronary arteries, so perfectly adjusted were the compressors. I now approximated the sides, passing the lower needle first from left to right, entering it about three-quarters of an inch from the fissure, carrying it through all structures but the mucous membrane, causing its exit to be at a point corresponding to and opposite its entrance. The second or middle needle was similarly introduced, but the third was entered from right to left; entering it on a plane above the level of the right nostril, now partially raised through the cutting of the septum and the liberating of the soft parts, causing it to protrude just below the left ala; this plan effectually restored the nose to the position of which it was deprived by nature's freak. Both nostrils now cor

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responded. Twisted suture was carried round the needles separately, commencing at the lowest. The arterial compressors were removed, and then strips of adhesive plaster brought over the intermediate spaces. A small piece was placed across the nose to correct the action of the pyramidalis and levator nasi muscles, and not to allow the lip to be dragged by the nose elevated by the cutting of the septum. The entire was painted over with collodion, and the large piece of plaster already described passing beneath the chin from one malar bone to the other, concave forwards, completely controlled the muscles. It was most satisfactory to witness the exquisite manner in which the parts came together, and the complete avoidance of any chance of an unsightly notch at the prolabium or red margin by the accurate position and carefulness with which the lower needle had been introduced. The child was now removed to its ward, and a suitable dose of Dover's powder was given, mixed with a little sugar; it soon fell asleep, and in a few hours awoke, partook of some warm milk, and again went to sleep.

17th.—Parts a little swollen; no undue tension; ecchymosis under right eye, which is partially closed; child refusing food; very irritable. Ordered—

℞. Calomelanos, gr. i.
 Sacchari albi, q. s.
 Ft. pulv. statim sumend.

℞. Bromidi potassii, gr. viii.
 Syrupi, ʒi.
 Aquæ foeniculi, ad. ʒi.
 Ft. mist. cap. coch. parvum quartis horis.

Eye to be fomented with sponges wrung out of warm water.

18th.—Bowels have been well acted on; child slept, and is taking nourishment; ecchymosis better; can open eye to full extent.

19th.—Progressing favourably.

20th.—I placed the child under chloroform, and removed the needles with a rotatory motion ninety-six hours after operation, having first oiled their ends; fresh plaster was adjusted, and those portions across the upper lip painted with collodion.

On the 21st the plaster was again removed; the silken ligatures which, as usual, remained, dropped off; the union was most satisfactory; the elevation of the nose was all that could be desired; one nostril was not more spread than the other; both corresponded. The child left hospital on the 3rd of November. So completely did aided nature effect a cure, that scarcely by minute examination could the place of joining be perceived. In eleven months after, when I heard of this child, I was told there was no mark whatever to indicate that hare-lip had existed.

CASE VIII.—Mary C., aged ten months, a native of Clare, born of healthy parents—no history of deficient family development—was admitted into hospital, under my care, on 26th September, 1874, suffering from single hare-lip on the left side, and separation on the same in the superior maxilla, with cleft hard and soft palates. The tip of the nose was dragged down towards the right side of fissure, while the left nostril was pulled towards its own side and flattened nearly level with the cheek. A more hideous deformity can scarcely be imagined. The child usually remained with its eyes half open, and had a pained and distressed appearance, as if conscious of its affliction. When it partook of nourishment the fluid regurgitated through its nose and flowed back through the sides of the mouth. Notwithstanding this it was a well-nourished child. On the 13th of October I operated after this wise:—The child having been rolled in a sheet, sitting on the knees of an attendant, an assistant steadied from behind the head, I detached the mucous membrane from the edges of the divided bones and stretched them across the osseous structures, bending, however, the right portion of the maxilla to the left side with Mr. Butcher's forceps. I now applied my arterial compressors as heretofore, and seizing the right side of the lip in a toothed forceps, I rapidly detached it, keeping the knife closely applied to the bone. I adopted the same course on the left portion, and then passing my small cutting forceps under the nostril's tip and a little to the left side, I was enabled to cut the vomer, and finally remove a piece from the cartilaginous septum. This accomplished all I could wish for respecting the elevation of the nose. With two sweeps of the curved scissors, seen in Plate 15, I freshened the edges of the lips and quickly brought them together, as in the other cases. I entered the upper needle first, carrying it from left to right, coursing on a plane a little higher than the left nostril, entering it about three-quarters of an inch from the cleft, and carrying slightly obliquely downwards, I caused it to emerge just below the right nostril, at the same distance from the freshened edge. The lower needle was next introduced, one inch from the edge, and traversing all structures but the mucous membrane, passed through the opposite side, its point of exit being the same distance as that of its entrance. One more needle between the upper and lower sufficed, and silken ligatures were cast round each needle and the ends removed. Strips of plaster passed in the interspaces, and the entire was painted over with collodion, the large piece of plaster being applied to steady the entire facial muscles. The child was removed to its ward, and the sedative, such as I order in these cases, given, it quickly fell asleep, and waking in some three hours after, partook of warm milk and barley water, and slept again.

14th.—Child slept well during the night, partaking of milk and barley water whenever it roused.

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15th.—Strips of plaster readjusted, and painted with collodion; no undue swelling or tension.

16th.—On the evening of this date I removed the needles, seventy-eight hours after operation. I put the child under chloroform before doing so.

On the 18th the suture came away; the line of union was beautifully even; the lower red margin was in perfect apposition, and all that could be desired. The nose had elevated to the position intended for it normally; the entire countenance of the child had changed; the distressed appearance left it; the eyes, before half-closed, were now widely opened; as if by intuitive knowledge it was aware that the deformity it suffered from was cured. Nor was this all—the milk no longer flowed from the sides of the mouth, nor regurgitated through the nose. Plate 8 admirably demonstrates the condition of the child before and after the operation. She left hospital in November, 1874.

CASE IX.—B. R., aged three months (recommended by Dr. D. Charlton, now of the Royal Navy), was admitted under my care on the 27th August, 1877, suffering from double hare-lip, with protruding intermaxillary bone. The separation went into the nostril on the right, which was much flattened and spread over the cheek of the same side, while on the left it did not pass into the nostril. The intermaxillary bone protruded beyond the margins of the lateral soft structures. There was not any division in the palate. I examined into the history of this case, which to me did not reveal why this child, the offspring of well-formed parents, whose other children were perfectly healthy, should be thus afflicted. On the 18th of September, the child being rolled in a sheet and placed on an attendant's lap, its head resting against the left of the chest and steadied from behind, I proceeded to operate; and first, detaching the central fleshy lobule from the protruding bone, I bent the latter back with the forceps mentioned in the preceding case, having previously detached the gums from its edges, and, freshening those on the maxillary bones, brought them together with suture. Then I freed the lateral soft structures from their osseous attachments, separating the right side higher up than the left, to assist in allowing the nostril to rise. I then cut through the septum narium with one stroke of the scissors, in order that the nose should elevate. The arterial compressors were next applied, and seizing the left portion of the lip in a toothed forceps, with my own scissors I quickly cut off the amount of tissue necessary. The right side was treated alike; and next the central fleshy piece was hooked by a tenaculum, the edges refreshed, and the parts brought together with fine needles, the upper one being first introduced from right to left, going a little higher than the edges of the much-depressed nostril, and passing out on a plane lower than the left in its passage. Catching the under tip of the central fleshy piece

which formed the columna, a turn of silk was now passed round this needle, and the compressors being removed, the lower needle was introduced about three-quarters of an inch from the edge; traversing all structures save the mucous membrane, it pierced the opposite side, the point of exit being the same distance from the edge. One other needle between the two already mentioned sufficed to bring the parts into perfect apposition. They came together as if adapted by nature—no unseemly notch marred the appearance of the marginal portion, the nose elevated to its correct position, and the right side rose to be exactly even with the left. Strips of plaster were next carried between the needles, and the large piece before alluded to passed beneath the chin. One more strip went across the nose to limit the action of the muscles, and then the child was taken to bed. An anodyne, after my habit, was administered. Sleep was soon procured; and the child, waking in some few hours, partook of milk previously heated.

I need not further relate the case, save to say that the needles were withdrawn on the 22nd of September with the usual rotatory motion—the child first being put under the influence of chloroform—being ninety-six hours after the operation. Plaster as before was carried across the lip from one side to the other. The suture round the needles came off on the 23rd, when the plaster was readjusted. The child left hospital on the 6th October, cured of its deformity, the symmetry of the nose restored, and the malformation of the soft and osseous structures of the mouth repaired and perfected.

CASE X.—Michael F., aged one month, a delicate child, was admitted into the City of Dublin Hospital, under my care, on the 22nd February, 1878, recommended by Dr. Borthistle. He was badly nourished, pale and anæmic, and suffered frequently from diarrhœa. He was afflicted with single hare-lip, the parted edges being much thickened and the nostrils widely spread over the cheeks; there was also a considerable separation in the osseous structures towards the right side, the inter-maxillary bone being not united to the maxilla of that side. The deformity was revolting, added to which there was a cleft in both the hard and soft palates—the mouth and nostrils being in one cavity. The child was unable, from the extensive deformities mentioned, to partake of nourishment. Sometimes regurgitation took place through the nose, again it would dribble from the mouth, and not unfrequently he coughed it back; as if for want of the guiding influence of the uvula the fluid did not take the right and indicated course. It was evident that the child was in a most unfavourable condition for operation, and yet it was a nice point to decide whether there could be much chance of improvement with the faulty way nutrition would be carried on. After some consideration I determined to wait, and devising a well-regulated regimen, in

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which chicken-broth took a large share, I was thus enabled to get the child, by the 10th of April, into a much stronger state of health; and on the 25th of April, more than two months from the date of admission, I operated in this manner:—Being prepared as the other cases, rolled in a sheet, thus controlling the movements of its arms and legs, and seated on the knees of an assistant, its head being steadied from behind, I separated quickly the gums from the bones at the sides of the osseous cleft, freshening the edges. I drew them together by means of catgut suture, having first bent the prominent bone to the right side, through which I passed, with a suitable needle having an eye in the point, a silver-wire suture, which also penetrated the maxillary bone, and with a strong forceps notched the vomer. The compressors being now applied, I detached the soft structures from the maxillæ, carrying the knife high up by reason of the extensive flattening of the nose, and the wideness of the cleft keeping its edge close to the bone. Now, grasping the right margin of the lip in a toothed forceps, with the scissors I revived it, taking off about quarter of an inch, and making certain to go beyond that portion of the under red margin which is slightly turned outwards, and which, if not properly and sufficiently removed, is one of the causes of the much-dreaded “notch.” Similarly was the left side treated; and now the lower needle was introduced through all structures save the mucous membrane, from left to right; a second a little higher up, and the third just below the nostrils. Suture of silk was applied round each needle, and the parts almost adjusted themselves, so accurately were they gauged. Small pieces of plaster were carried between the needles, the points of which had been cut with the pliers, and the suture was painted over with collodion; the large piece of plaster, modelled as before described, kept all the facial muscles at rest.

The child was now given in charge to its mother, who had cared and accompanied it to hospital. All progressed favourably. He was able to take his nourishment better, when—two days after the operation—the mother sickened, shivered violently, and the next or third day an erysipelatous blush appeared on her forehead and face.

Great was my apprehension lest the child should be attacked. Delicate from birth, never able to suck, improved by its stay in hospital, and careful line of nourishment laid down, only now sufficiently strong at all to admit of operation—surely, if attacked by erysipelas, not only must the wound open but probably slough, and the vital powers of this fragile infant succumb to so dire and destructive a malady.

The first and immediate course was the isolation of the mother; for although the handing over of the child to a stranger tended to retard its progress, the least of two evils had to be adopted. I ordered a suitable dose of calomel to be administered, good chicken-broth, milk, with small quantities of whisky, and a mixture containing bromide of potassium.

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On the fourth day after the operation there was some slight redness at the site of the central needle, which I removed, and reapplied plaster over the part it traversed—oil, with the watery extract of opium, being smeared round the lip. On the next, the fifth day, I removed the under and upper needles, fully expecting the entire would open out and that no union had taken place, but, on the contrary, to my great gratification, there was very perfect union both above and at the red margins. But in the centre, where I had removed the needle, and where the red blush appeared, there was a small aperture which I expected would have healed by granulations; but failing to repair after this manner, I freshened the edges in the little central opening with a fine tenotome, and introduced one point of interrupted suture. I had previously taken out the interosseous wire. In three days this pin-hole foramen, so to speak, completely closed.

The recovery was excellent, and in May, 1878, the mother and child left the hospital. The condition of the child, then about four months old, is well and accurately shown before and after the operation in Plate 10. It would appear as if there was a slight notch from the representation, but such did not exist; it is only an appearance due to the pursing of the child's mouth when the picture was taken, for the red margin was perfectly even throughout.

CASE XI.—Herbert R., first admitted in November, 1877 (recommended by my friend, Dr. Whittaker), then only one month old, a delicate-looking child, suffering from single hare-lip on the left side, with maxillary cleft on the same, with much flattening and spreading of his left nostril. There was no difficulty experienced by the child in taking its nourishment from a bottle, with which it was entirely fed. I therefore determined, on account of his weakly state of health, not to operate then, but to wait till a more favourable opportunity, when the child was older and stronger. He was discharged.

The mother and child were re-admitted in January, 1878. Plate 11 represents the child accurately at four months old, and the amount of deformity alluded to is graphically depicted.

On Tuesday, the 19th February, I operated in the following manner:—Rolling the child in a sheet, as in the other cases, and placed in an attendant's lap, its head being steadied from behind, I separated the gum from off the bone at each side of the osseous cleft, and bent backwards and towards the left side the protruding right maxillary, then drew the edges of the freshened gum together with interrupted suture. I now rapidly separated the soft structures from the maxillary bones, detaching it more on the left, on account of the flattening of the nostril, than on the right side, keeping the knife very closely applied to the bone. This being done, I applied the arterial compressors and cut the margins of the lips.

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Not a drop of blood escaped from the coronary arteries, so perfect was the compression. I now introduced the upper needle from left to right on a plane higher than the nostril and about one inch external to it, bringing it out at the opposite side on a slightly lower level. This had the desired effect of elevating the nose, nor did the septum require to be notched. The lower pin was next introduced one inch from the refreshed surfaces, and at the margins the coaptation was simply perfect, and the red prolabium came beautifully even, as if adapted by nature herself. A coarse silken thread was carried independently round the upper and lower needles, the arterial compressors were now removed, and a central needle passed across the fissure; a twisted suture drew this middle portion into apposition. I next painted over the suture with collodion, and applied the plaster between the needles, as described in the former cases, having first cut off the ends of the needles, and then the large piece encircling the chin was adjusted. Before the child left the theatre it was observed to breathe a little rapidly; it had only just returned to its ward when it was seized with a fit. I thought this might have been from want of entrance of air and not having the same wide aperture to admit of inspiration. I therefore depressed the lower jaw; but, no, this was not the cause. Its eyes turned up, its thumbs turned into the palms of its hands—it had convulsive spasms. I saw there was no chance of saving its life but the removal of the needles and the undoing of all the work so beautifully adapted. With the assistance of Mr. Patten and Mr. E. White, then residents, I removed the plaster, applied the arterial compressors to prevent hæmorrhage, cut the ligatures, and withdrew the needles. Cold effusion was applied to the child's head in moderate but efficient quantity; it soon was quite restored, cried lustily, and sucked some milk through the tube of its accustomed bottle. Thus I left the little patient, and ordered it grain doses of bromide of potassium, and some whisky in its milk. In six hours after I returned, and found the child so well that I determined to bring the parts together; no blood had been lost, the compressors controlled the vessels since as during the operation. Now, having a fine pulse, I removed the compressors, but there was no hæmorrhage; the vessels were sealed, but on rubbing the edges with a sponge they were soon refreshed, and the blood gently flowed from the raw surfaces. I reapplied the needles in the manner before described, also the plaster, and in addition introduced two points of interrupted suture—one at the red margin, the other between the lower and middle needles. Not a bad symptom followed, the needles were removed in eighty hours after the operation, and the child discharged perfectly cured on the 14th March, 1878.

In the numerous cases I have operated on for hare-lip I never, before or since, have seen convulsions follow the operation. I ar

aware that Sir Astley Cooper, Mr. Syme, and Mr. Abraham Colles, thought such common, and for this reason did not consider too early operation advisable, whereas we have the testimony of the late Sir William Fergusson and that of Mr. Butcher as never seeing convulsions caused by the operation of hare-lip. As I have before stated, this is the only time it occurred in my practice.

CASE XII.—M. B., aged four months, was admitted into the City of Dublin Hospital in May, 1876 (recommended by my friend, Dr. C. Lyster, F.R.C.S.I.), suffering from double hare-lip, with protruding intermaxillary bone; the central lobule being attached to the nose, the intermaxillary, being unusually large in width, pushed forward by a thickened and expanded vomer. The nose was not much flattened—a little more, however, on the left than on the right side. The soft palate was separated at its inferior part for about half an inch upwards. Save for the mouth deformity the child's face was peculiarly attractive. There was a great depth of forehead, lightly pencilled eyebrows, with bright eyes of unusual lustre, which, even at this tender age, flashed with response so characteristic of intelligence and genius. No hereditary cause could be ascertained; no ancestral deformity could be traced; no external reason assigned, during pregnancy's period, why development should have been arrested—why Nature's caprice should thus be indulged, and parts distorted from their normal position, rendering this otherwise handsome child an object of pity and distress. Although it is not my custom to operate on clefts of the palate sooner than the age of thirty or thirty-five months—there being obvious reasons for this course—yet the cleft was so small, and the parts even of themselves fell so closely together, I determined at the operation of the mouth to close the palate.

On the 13th of June, having prepared the child by rolling it in a sheet, similarly to cases already described, I had it held by an assistant. Being seated on a nurse's lap, the mouth was kept open by means of a gag, the tongue at the same time being depressed. I now passed a suture of silk through the edge of the left side of slit palate, and then another through the right, and drawing the left portion forward I cut off with a long curved knife, such as I am in the habit of using, sufficient of the edge, acting similarly on the right side, and then brought the margins together with catgut suture. There was no tension whatever, and any slight hæmorrhage there was ceased on the approximation of the sides. I now proceeded to rectify the mouth, and first acted on the central piece, dissected up the soft portion, or, as some improperly call it, the prolabium, then I notched the vomer with the cutting forceps I use, and shown in Plate 15. It was obvious, from the over-development and great width of the intermaxillary bones, they would not fit in the opening between

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the superior maxilla, so I took a small piece off each side with the same forceps, to allow this central osseous structure to fill up the gap, and now I cut it partially at its upper part with the instrument so ingeniously contrived by Mr. Butcher for that purpose (and shown in his "Surgery"), and bent it into the space now ready to receive it—the bending being facilitated by the previous notching of the vomer. I next dissected off the gum from the edges of these adjoining structures on each side, and having pared their margins, sutured them together. A silver wire inter-osseous suture being introduced on each side, my arterial compressors were next applied over the coronary vessels, and the soft lateral structures separated from their bony attachments to sufficient extent—being detached more on the left than on the right side—to assist the elevation of the nose. I now seized the margins of the left side in a toothed forceps, and quickly, with the curved scissors, removed more than quarter of an inch, making sure to get well beyond the turn and eversion of the lower red marginal or prolabial portion; thus, also, was the right side treated. The central soft structure was now seized and its lateral edges removed; being cut V-shaped, its lower extremity was finely pointed. This structure was destined to form the columna of the nose, and the pointed portion fitted neatly, being traversed by the upper needle, which was entered on a plane higher than the nostril of this side, and emerged at an equal distance from the cleft on the right side. The lower or red marginal needle was now introduced through all structures but the mucous membrane. The compressors were removed, and a silken suture cast round the lower needle. The edges came into beautiful position. One more needle was passed from the left side above the lower, and silk cast round it. As may be observed, no attempt was made to draw down the central soft piece, in case of depressing the nose; it fell back into the place for which it was prepared. Collodion was now applied over the sutures, and the ends of the needles snipped off with the pliers. Strips of plaster were carried between the needles which, in their turn, were also coated with collodion. A small piece was placed across the nose to prevent the little central lobe from being displaced by the action of the muscles. The dressing was thus finished and the child sent to its ward. When the plaster, attached from one malar bone to the other, was adjusted, and which has already been alluded to, half a grain of Dover's powder was then administered. Sleep soon overtook the child; it remained composed for three hours. On waking, it took some milk, and was in a very quiescent state. He had a quiet night, rousing only to partake of nourishment.

14th.—Nothing could be more satisfactory than the condition of the parts operated on. All progressed favourably, and on the 17th June the needles were removed with the usual rotatory motion. The union was complete, the left side of the nose elevated, and exactly corresponded to

the right; the columna was perfect, the red margin of the lip was even to exactness. I placed strips of plaster across the mouth to steady the parts.

On the 20th I removed the interosseous suture. The child left hospital in July, perfectly cured, a triumph of plastic surgery, and is accurately depicted, before and after the operation, in Plate 12.

CASE XIII.—William M., aged nine months, from the county Cavan, was admitted on the 28th day of February, 1876, suffering from double hare-lip, complicated with intermaxillary cleft, but there was no protrusion whatever—merely a want of union on each side to the maxillary bones. His nose was widely spread and much flattened. When he laughed or smiled the deformity was dreadfully increased. This was a well-nourished child, and had an unusual quantity of light fair hair. Nothing can show better the exact condition of parts before and after operation than Plate 13.

On Tuesday, the 14th March, having made the usual preparations, and the head being steadied, as I have described elsewhere, I operated before a large class of students in the Theatre of the Hospital. Commencing first at the central soft slip, I freely detached it from the pre-maxillary bones, and now raising the gum from the corresponding margins of the maxillary and intermaxillary bones, I freshened their respective edges, and brought them together by points of interrupted suture. There was no occasion to interfere with the middle bony piece; it lay between the maxillary bones evenly. Next, with a narrow-bladed knife, and keeping close to the bones, I separated the lateral soft structures, and, as the nose was much expanded over the cheeks, I detached higher than the level of the nostrils. Having seized the extremity of the centre piece with a tenaculum, and removed sufficient off the sides, nicely pointing its inferior angle, I now applied my arterial compressors, and freshened the edges of the lateral soft portions, taking care to go well outside the turn of the lip which always exists at the lower red border, and I now brought the parts into apposition, having first notched the septum to allow the nose to slightly rise at its tip, and not to give it a pinched appearance by reason of the compulsory narrowing of the widened nostrils. The upper needle first passed from left to right, entering about three-fourths of an inch from the cut edge, and traversed the pointed extremity of the central fleshy slip forward and destined to make the nasal columna. Next the lowest needle, or that at the red margin, was introduced at the same distance from the edge, its point of exit corresponding, and then the middle needle in the same way. Twisted suture closed the gap, not from one needle to the other, but from each one separately; collodion over all, and plaster, as already described, with an additional piece over the nose to prevent its dragging unduly on the middle slip. The arterial compressors had been removed when the

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lower suture was applied, and the ends of the needles cut before the child was sent to the ward.

On the 15th the little patient was progressing favourably; not a bad symptom had followed. The needles were removed seventy-eight hours after the operation. The formation was perfect; the union as complete as if nature herself had performed her proper functions. The child left hospital in April without deformity, a goodly specimen of the science and art of surgery.

Double Hare-lip, with extensive separation of the soft structures; cleft hard and soft palate; flattened, expanded nostrils; absence of intermaxillary bone, removed in an attempt to rectify the parts and bring them together in early childhood. Complete union and little deformity, by a modification of the operation called Malgaigne's.

CASE XIV.—Ellen Q., aged twenty-six, a native of Kilkenny, was recommended to the City of Dublin Hospital, under my care, by my friend, Dr. Lyster, who saw her for the first time a few days before her admission, 15th October, 1878. She suffered from double hare-lip of a most aggravated form, together with cleft hard and soft palate, the intermaxillary bone having been excised in an attempt to restore the parts to their normal condition at an early period of life. This patient was in a pitiful condition, scarcely articulating to be understood, and in her attempts to be so would repeat again and again the same sentences. It was distressing to witness her deplorable state; and in her often futile endeavours to make her expressions intelligible the deformity increased to an extent almost beyond realisation; the nostrils would expand and spread considerably more than shown in the drawing; the sides of the divided lips would open to nearly double the distance of their passive state, and then suddenly and almost spasmodically approximate again. The mouth and nose were in one large cavity. Before her admission she lived as much a recluse as possible, avoiding every society, not wishing to be noticed, nor to enter into pursuits of any kind. There was no family history of existing deformities; her father and mother were healthy. To endeavour to approximate these already mutilated and widely-separated lips was to undertake an operation of no little gravity and difficulty. The central osseous portion being gone, there was no support for the lip; the middle fleshy lobule diminished and cut away; the cleft, always large, made larger by a previous unsuccessful operation. Such were the difficulties. No pressure laterally and forwards could bring the parts even tolerably close. For several days I had strips of plaster drawn from one side of the face to the other, across the cleft, to accustom the parts, as it were, to be pulled forward; and having given the case due consideration, I determined to adopt Malgaigne's operation in principle, and to make what modification I might think necessary; and if

the tension was too great to relieve it by two lateral vertical incisions beyond and external to the fissure. The palate, both hard and soft, was so widely apart that no operative procedure could restore them.

On the 26th November, having her seated in a chair, with a board placed across her thighs, which was fastened to the legs by means of a bandage passed through holes in its ends, and her hands being also controlled, an assistant steadied her head from behind, while she leant back against him. I now freely detached the soft structures from their attachments to the superior maxillary bones, and then I applied my compressors as far as possible from the edge of the fissure. Now standing behind the patient, holding in my left hand a tenaculum which had pierced the inferior portion of the right side of the lip near the red border, I cut with my scissors from above downwards a portion of the lip, but did not detach it below. The same was done on the opposite side; and now the edges of the central piece were removed, and the nasal septum notched. That portion of the lip which I had cut down on the left, being freshened on both sides, I carried obliquely up to meet the middle fleshy slip; and that portion cut from the right side to its free margin I carried across till it met the left similar portion, to which I mortised it, holding it attached by a fine needle and twisted silk. This right piece formed the lower margin, or what is properly called the prolabium. I now passed a needle about one inch from the divided parts, on a level with the nostrils, from left to right, emerging its point at a like distance on the opposite side, causing it to travel through the central fleshy portion, but not at its apex or inferior angle, but higher up, for this was already joined to another structure, as mentioned; nor could it be utilised entirely for a columna, but had to be pulled a little down to help to fill up the large deficiency, notwithstanding that it might depress the tip of the nose. A silken suture was passed round this needle, the parts being first pushed towards one another by the hands of an assistant. A second fine needle was entered a little lower down, passing through the upper portion of the utilised paring of the left side, which I had joined to the middle piece by an interrupted suture; and a third needle was entered still lower, twisted suture being employed to maintain the parts with the assistance of four points of interrupted. The points of the needles were removed by a cutting pliers. The compressors were now taken off, having done good service, scarcely any blood being lost in this lengthened operation, beset with many difficulties. Narrow strips of plaster were carried between the needles, and painted with collodion; one small piece was brought over the nose, and the wide piece (cut concave forwards) brought from one malar bone to the other, passing beneath the chin. This effectually steadied the muscles and prevented their action. I had previously warned this patient of the necessity of remaining as quiet as she possibly could during the operation.

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It was astonishing the amount of control she possessed, undoubtedly influenced by her anxiety for success. She was removed to her bed directly after the operation, and partook of some iced milk through a bent glass tube. By this method was the patient fed on milk, cold beef-tea, and chicken broth. A hypodermic injection of morphia was administered at 9 o'clock, p.m. She passed a good night; indeed there was not any unfavourable symptom, and on the 30th November I removed the needles, with a rotatory motion, having first oiled their ends. The suture, as is the rule, remained attached after I took out the needles; and as far as could be seen union had taken place; plaster was applied as before, and the next day but one all was taken away, including the four interrupted silver wire sutures; the silk which had been cast round the needles fell off, and union was found to be most perfect. Strips of plaster were again applied, as well as the narrow piece over the nose, so that no undue drag might be put on the central portion by reason of the elevation of the tip, permitted and assisted to do so by the septum being nicked as before stated, until complete and firm union had taken place.

On 18th December the patient left hospital. The notes of the case were carefully taken by Mr. Augustus W. Woodroffe, B.A., my surgical dresser, a highly distinguished pupil. I quote his description, as being the most accurate I could give:—"The patient left hospital to-day, the parts having healed up beautifully; only a faint cicatrix, having somewhat the shape of the letter H, is observable; her nose is considerably raised, and her powers of articulating much improved. Her general health never suffered from the operation."

I have stated the method I adopted was a modification of M. Malgaigne's. Some, however, state he is not entitled to the credit of the operation that bears his name. M. Roux states it was originally done by Clemot, and Mr. Maurice Collis accredits it to Mr. Samuel Smith, of Leeds. Indeed, my procedure was partly Malgaigne's and partly M. Mirault's operation.

As I stated in the commencement of my paper I would record some of the most interesting cases of hare-lip from among the large number that have come under my care, and have also described the mode of operation necessary for each, I will now make some observations on the most advisable time for interference. Various, indeed, have been the opinions expressed as to the most suitable age for performing the operation. Mr. Liston says:—"I advise you to defer the operation till the first set of teeth come in, and I have good reason for adhering to such a rule. When the operation is undertaken at an early period there is often great

difficulty; sometimes union does not take place, the parts turn out again, and the patient is rendered more deformed than in the first instance. When the features are enlarged somewhat you have more ground to work upon, you can put the parts neatly together, and you can almost answer positively for union taking place." "For my own part," writes Mr. Bransby Cooper, "I entirely agree with Sir Astley Cooper in regarding it unsafe to operate on infants before weaning; first, because, from their excessive irritability, they are totally unable to sustain any loss of blood; and, secondly, because after the operation they are rendered incapable of sucking. Indeed Sir Astley Cooper has pointed out the frequency of the failures he met with in his own practice, in operating on infants shortly after birth. I consider the best time is soon after the child is weaned. It is then capable of receiving nourishment independently of the mother."

Dr. Houston was in favour of the third month after birth, and also Dupuytren, who thought the flesh of newly-born children too soft, and believing the needles would tear through it, and because of greater mortality than at a later or any other time of life.

Syme, believing convulsions of common occurrence from the operation, advised against operating immediately after birth.^a Chelius recommended the period of eight months; and only when the "wolf's pharynx" is along with hare-lip, and that the child could not suck, would he advocate the operation to be undertaken within the first six months.

Mr. South would not perform it till two years, and, if possible, would wait till the child was six years old. He thought early operations inadvisable, as the crying of the child tears through the adhesions, and an unseemly notch occurs in the lip. Lawrence, Rocca, Mestenhauser, and Sir W. Fergusson, prefer about the end of the first month: Dieffenbach advised the operation should not be performed till after dentition. Dubois, Malgaigne, Giralde, and Abernethy advised operation soon after the birth of the child. Guersant says that in seven operations immediately after birth he had only one failure, whilst in the same number at the age of one month he had five failures. Professor Dubois, before alluded to, read a paper on the subject of early operation, at the Academy of Medicine, Paris, in the year 1845, relating seven cases that had come under his observation where the operation was resorted to

^a Principles of Surgery. 1842.

successfully a few days after birth. Malgaigne and others have adopted like practice; also Dr. J. Mason Warren. Sir W. Ferguson, in his "Practical Surgery" (fifth edition), says:—"From all my reflections and experiences on the subject, I am more than ever disposed to recommend a very early operation. Most of my patients have been under three months old."

It would be impossible to lay down dogmatically any hard-and-fast rule as to the exact period for operative interference in every case of hare-lip. There are circumstances that may demand an operation immediately after birth. No matter what age the child may be, if it be in need of nourishment and deprived of such by the food running out through the fissure of the mouth or through the nose, I hold it is the duty of the surgeon to operate at once, and prevent death by inanition if possible; but, should such urgent indications be not present, and that I could select a period, I would choose from *three to six weeks after birth, and within three months*. The earliest period at which I have operated was twelve days old, and the latest twenty-six years; but that the operation can be undertaken at any period after a month is well exemplified in the few cases I have selected to record, and out of the entire number I have operated on I have been fortunate enough never to have lost a patient. I have not been able to see any objection to operate during dentition. I am aware that many writers direct this time to be let pass or to operate before it; but, unless there is great suffering and distress, which might be increased by an operation, I would not feel it was necessary to postpone. Of the advantage of early operative measures there can be no question. The child can take nourishment better. Many of my cases sucked from the mother with vast improvement, the needles still holding the parts together. Besides, at an early age the child is more manageable, and the structures are more amenable and more likely to approach their normal state, independently of many other obvious reasons.

Should the palate be split, the joining of the lips tends to its closure. This advantage has been alluded to by Mr. Butcher in his "Operative Surgery," page 655, and is clearly verified by Mr. Henry Smith, who refers to a patient of Mr. Bateman's operated on four hours after birth, at which time the palate was so split that the mother could put her fingers into it, but in three years after would only admit the edge of a sheet of paper.

I cannot understand how such an erudite and dexterous surgeon

as Mr. Liston could have been so unfortunate as he records in his results. Mine alone are sufficient to controvert both his and Mr. Bransby Cooper's objections to an early operation—as also Dupuytren's, who thought the flesh too soft for the needles. Nor can the fear of convulsions be considered a barrier, as stated by Mr. Syme and Sir Astley Cooper. I have observed it but in one case (Herbert R., Case XI.), and, as there mentioned, it is unusual.

But there are cases which may require to be postponed, and that for a very long period. I allude to those cases of aggravated double hare-lip, with protruding intermaxillary bones, with cleft hard and soft palate. Supposing a surgeon meets a case of this kind, the child taking its nourishment tolerably well, it may be incumbent on him to postpone performing the necessary operation for a very lengthened period—even for several years—for there may not be *physique*; or, even if there is, and fair development, there may not be that vital force within the patient to withstand the shock of such an operation. Experience will now help the surgeon to decide whether the strength of the patient will be equal to the strain and to the demand upon it. Such is illustrated in Mary M., Case VI. Had that child been subjected to so severe a procedure as was necessary for the restoration of the deformity at an earlier age, the probability is she would have succumbed.

With regard to operation there are several results to be looked for—the most important indication is to join the fissure; but there are others, in my mind, not less important. It seems equally essential that the beautiful prolabial (red marginal) curve should be restored, the unsightly notch prevented, the fossa labialis formed, and the nose, whether distorted on one or both sides, restored to its proper position. Such results cannot be obtained by inexperienced hands, or by those ignorant of the anatomical relations of the mouth. Truly, surgical artistic skill is much required in this operation. I have not been able to appreciate or to see any advantages in the fanciful operations, such as Giralde's mortise, M. Mirault's, Sédillot's, nor M. Henry's; indeed, they prevent the indications, as stated above, being accomplished, for the surgeon operating after their manner cannot possibly preserve the perfect curve of the red margin, nor can there be the most tension over the incisive fossa, so necessary to cause a slight protrusion at the lower border. Malgaigne's operation and its modifications may occasionally be necessary, but not to prevent the labial notch—it is not required for that purpose. If the lower needle is introduced after

the manner I have described, and the edges correctly cut, no notch can exist, nor can it follow by the contraction of the cicatricial tissue, as stated by an American writer, if the marginal joining be perfect in the first instance.

Nélaton's operation adopted in Case IV., and there recorded, produces beautiful results; but in the majority of cases that will present the cleft can be closed and the symmetry of the mouth restored by cutting the edges from below upwards with the straight or curved scissors. I am not wedded to either, but there are cases where the curved would be very inapplicable, and too much substance might be removed. The ellipse made by the curve has many advantages, but in careful hands either instrument will procure excellent formation. Notwithstanding the examples given of the treatment of the central lobule and the protruding intermaxillary bone, I feel a few further remarks necessary.

In shaping the central fleshy piece some care is requisite not to leave any portion of the edge towards its inferior extremity uncut; it invariably suits for a columna for the nose, and has been fitted as such in the cases recorded; nor is it expedient to depress it much if not utilised in this way, as it only pulls upon and depresses the nose.

With respect to the intermaxillary bone protrusion, several methods of treatment have been advised by writers on the subject—excision or removal being the practice of some, as Sir William Fergusson and Franco, bending it into the place it ought to occupy being the method used by others. There are those who condemn this latter plan—adopted by Messrs. Marjolin, Huguier, Butcher, Gensoul, and myself, with good success. Desault had favourable results from compression of the bone in eleven and eighteen days by a band fastened behind. Professor Léon Le Fort (*Bulletin Général de Thérapeutique Médicale et Chirurgicale*, 1878) advocates the removal of the bone. Breaking the pedicle he thinks dangerous as well as inapplicable, and fears breaking the cribriform plate of the ethmoid bone. One tries, he says, to break the vomer by putting the weight on the intermaxillary bone, but at this point the vomer is very resistant, and one will be very much exposed to carry the fracture into its base or cribriform plate, and might thus fracture the base of the skull. Again, he thinks the bony tubercle brought backwards describes the arc of a circle too long, or, taking an oblique direction, directs the teeth behind, and the end of the nose, before flattened, is drawn back still further by pulling the

tubercle, to which it adheres. Besides, what is the use of preserving? The bony tubercle bears only two incisors. Again, he says, another difficulty of intermaxillary—what to do with the fleshy slip at the extremity of nose.

The Professor comments on a case of Mr. Butcher's, and thinks the lamina that was broken must have been a very slender structure.

Professor Léon Le Fort, in thus writing, does not appear to understand that in the case he alluded to the bone was half cut through, the soft tissues being preserved before any attempt was made to bend back the intermaxillary. If this course is adopted and the vomer notched, or a triangular piece cut from it, as done by Blondin, it would be impossible for a fracture to be carried where he describes—the base of the skull. And even if the teeth should be directed backwards, that is no reason for removing the bone. The teeth can be removed, and the natural support still remains for the lip; but, I doubt not, this pernicious position of the teeth could be guarded against by mechanical contrivance. As for the nose being flattened, if the central fleshy lobule is correctly dealt with, and the septum, such cannot occur. Contrary to the Professor, I am of opinion that one of the most cogent reasons for preserving this osseous piece is because it contains teeth, and although invariably but two—the central incisors—the germs of the four incisors are in the intermaxillary bone, and the lateral incisors may develop.

No, this central piece should not be taken away. In almost every case it can be preserved, bent in the manner I have recorded, held there by interosseous suture, and interrupted through the gums as well. There is sometimes difficulty in penetrating this bone on account of the teeth-germs, but this is not of frequent occurrence. I have never seen this bone remain movable when properly treated in the first instance; there is no occasion to make a separate operation for placing the intermaxillary in position, the soft structures can be operated on at the same time. So desirous am I to preserve this projecting bone that I have cut off portion of its anterior surface, which bulged too much forward, and its inferior, which came below the maxillary bones themselves. I saw a case of this kind two years after I had operated. The bone was firmly fixed; the teeth, as might be expected, were absent, but the lip was well supported, and the nose, which had been much depressed, raised to its normal position.



The form of suture I prefer is the twisted—a neat and long hare-lip needle, finely pointed—or the one used by Mr. Butcher. I do not believe the interrupted will hold the parts so evenly together—the nose could not be elevated so well, especially if only one side was depressed; there would not be the same firmness and support to the parts; the notch at the red edge could not be so well prevented; for, I repeat again, if the lower needle is correctly introduced there can be no “notch;” there is, then, no need of the interrupted point within the red margin. The shotted would have the same disadvantage. The quill is obviously objectionable. Yet all these forms, and many others, have had their advocates. As a rule the lowest needle should be first introduced—the marginal edge adjusted—but in many instances this cannot be followed, for it is more advantageous in much nasal deformity to begin above.

Silk or hempen ligature (I prefer the former, it is soft and adapts itself) cast around the needles hold the parts together. The entire can be painted with collodion; it keeps the secretion from the nose and all moisture from penetrating. Plaster, as I apply it, is always sufficient to give the additional support. I have used Hainsby's truss on one occasion. It is a useless instrument, and even with great care will get displaced. I have read of a similar instrument invented by Dr. Dewar, and studied the *rationale* of Louis's bandage for compressing and supporting the cheeks. None of these will ever supersede the plaster, or give the same even support. I find from very accurate notes the average time I have removed the needles is ninety hours after operation. The best position for the patient to be operated on is, I believe, the sitting—much to be preferred to placing the child on its back, with its head between the operator's knees. The surgeon sees better the relation of parts, and can adjust them more satisfactorily. There is no danger of blood passing to the stomach and causing subsequent vomiting, or passing into the larynx, producing dyspnœa. To prevent hæmorrhage from the coronary arteries I devised the arterial compressors seen in Plate 15. In every case I have used them they fulfilled all their requirements. They stop hæmorrhage, thus rendering the hands of an assistant unnecessary for this purpose. Thereby the operator has more room, is entirely independent, and parts are not pushed from their place; the surgeon sees more easily the exact amount of deformity to be rectified; they do not interfere with the introduction of the needles; the cut edges are much drier when about to be joined; they steady the muscles—the zygomatici

and levatores—which often act to the detriment of the operator just as the lip is being cut; they cannot relax—an assistant's pressure may.

Regarding the instruments to cut with, some select the knife, others the scissors. The French, influenced by Dubois, adopt almost universally the latter. I have found by comparison this instrument the best, and have added to those I use a sheath on the under-blade. This has many advantages. The operator can gauge exactly the amount of tissue cut; he can sever it in one stroke from the solidity of the under-blade; it cannot wobble from the increased width; there can be no contusion; the posterior edge of the lip cannot be bevelled; it acts as a support for the lip to be cut on; it gives it all the advantages claimed for the bistoury, and removes the objections to the scissors. I have used it in almost all my operations.

My best thanks are due to the Messrs. Forster, of Crow-street, for the trouble they have taken with the Plates accompanying this paper, and the accuracy with which they have been executed.

ART. II.—*A Case of Bilateral Paralysis of the Posterior Crico-Arytenoid Muscles.* By RICHARD A. HAYES, M.D., Dubl.; F.R.C.S.I.

IF we except the crico-thyroids, the intrinsic muscles of the larynx may be placed in two groups—those which cause the vocal cords to approach each other, and those causing them to separate. The latter group consists only of the two posterior crico-arytenoids, the remainder assisting in a greater or lesser degree in the closure of the glottis. As a consequence of this natural division, unilateral or even bilateral paralysis of any of the muscles which adduct the cords can give rise, as a rule, only to affections of the voice at the most amounting to complete aphonia, and not in any way affecting the patient's life, the only exceptions being those cases in which there exist at the same time sensory and motor paralysis, when, of course, there is a source of much danger through foreign bodies, such as particles of food, passing into the wind-passages without the patient being aware of it.

But the case is very different when there exists a bilateral paralysis of the only “glottis-openers”—the posterior crico-arytenoids. Here there is a condition of the very greatest danger,

which, if not recognised, may lead to a fatal and sudden termination.

If the only consequence of a paralysis of these muscles was the impossibility of the opening of the glottis becoming wider than in the state known as the cadaveric position of the cords, which would be the state of things while the other muscles were at rest, there could be, at the most, some dyspnoea on exertion; but the important factor in this lesion, when it has existed for any time, is the "paralytic contraction of the antagonist muscles," which gradually lessens the opening of the glottis until it is reduced to a narrow slit; the condition is then most critical, the dyspnoea having increased gradually, and if the patient has no occasion for exertion almost imperceptibly; a slow carbonic acid poisoning takes place, and a very slight swelling of the cords from cold, &c., which in health would pass unnoticed, may cause asphyxia in a very short time, even before relief can be given by tracheotomy.

This serious condition has been only recently recognised. Von Ziemssen says:^a—"Our knowledge of this important lesion dates from within the past few years. I count to-day only a total of nine cases of complete bilateral paralysis of the crico-arytenoideus posticus."

Professor Burow has just published^b a very complete table of cases, from which it appears that within the last four years twenty-one cases have been recorded, while during the previous thirteen years (the first was described by Gerhardt in 1862) only fourteen were reported.

This increase in the number of recorded cases is, no doubt, due to the more general use of the laryngoscope, and the greater familiarity with those symptoms peculiar to the lesion, the occurrence of which would suggest an appeal to the laryngoscope in order to complete the diagnosis.

The symptoms which may be recognised without the aid of the mirror are peculiar. They are thus concisely given by Ziemssen:—"The very gradual development of a purely inspiratory dyspnoea, generally without catarrh or disturbance of voice."

Expiration is effected without difficulty. The laryngoscopic appearances are unmistakable, the vocal cords lie close together in the median line, and on making the patient inspire deeply they are seen to approach still more; they act normally during phonation.

^a Cyclopædia of Pract. Med. Vol. VII., p. 959.

^b Berl. klin. Wochenschr. 1879. No. 33-34.

Almost the only conditions likely to be mistaken for that under consideration would be an ankylosis of the arytenoid cartilages with each other, or with the cricoid cartilage, or where the cartilages or the posterior extremities of the cords themselves have become connected by cicatricial bands, such as are often found after the healing of syphilitic ulceration. I have seen a very interesting case of the latter, which, at first sight, strongly resembled the paralytic condition.

I shall not attempt any general discussion of this important lesion, but refer those wishing full information to its very complete treatment in Von Ziemssen's work, and also to an able and exhaustive paper on the subject by Dr. Felix Semon in the *Clinical Society's Transactions*, Vol. XI.

I am indebted to the kindness of Dr. Semon for permission to report the following case, which came under my care while in charge of his clinic during his absence from London:—

W. H., aged thirty-one, house painter, applied at the Newington Butts outpost of the Hospital for Diseases of the Throat and Chest, Golden-square, W., on August 4th, 1879, complaining of great difficulty of breathing, from which he had suffered for two months, in consequence of which he was unable to work. He also stated that the people in the house where he lodged complained of the very loud noise he made in his throat at night. He appeared to be in a bad state of health, and looked very miserable; his inspiration was noisy, voice strong, but somewhat hoarse.

The patient gave a good family history, and said that he had always been healthy. Eight years ago he had a chancre, followed by sore throat, but he did not remember having any skin eruption; the chancre had remained for some time, and was very "horny." He was treated with mercury to salivation.

About four years since he fell off a ladder, and struck the left side of his neck; and two years ago he had a swelling on the right side of the neck, which suppurated; he was treated as an out-patient at St. Bartholomew's; several incisions were made at the time. Just previously to this two small lumps had slowly grown in front of the larynx, but they disappeared when the suppuration occurred in the neck.

On examination, his mouth, fauces, and pharynx appeared healthy, with the exception of a slightly granular condition of the posterior pharyngeal wall. On looking into the larynx I found the vocal cords almost meeting in the median line, being separated merely by a narrow slit; in phonation they came perfectly together, but on making the patient inspire deeply the cords did not separate more than one-eighth

Fig. 1.

**BILATERAL PARALYSIS OF POSTERIOR CRICO-ARYTENOIDS,
WITH CHRONIC LARYNGITIS.**

Position of Cords during Deep Inspiration.

From an Original Drawing by R. A. Hayes.

Lithographed by John Falconer, Dublin.

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Fig. 2.

LARYNGOSCOPIC VIEW OF GLOTTIS.

Showing Normal Position of Cords during Deep Inspiration.

(From "Quain's Anatomy." After Cermak.)

of an inch at the commencement of each inspiration, and this distance became considerably less as the inspiratory act was continued—the free edges of the cords, at the same time, being drawn downwards in the centre. There was a considerable chronic laryngitis; the right vocal cord was very red; the right ventricular band also red, and much thickened; the left vocal cord was slightly congested; the left ventricular band appeared normal. The laryngoscopic image of the case is shown in Fig. 1, drawn on the second visit of the patient. I made a careful examination of the neck and thorax, but failed to discover anything abnormal. A few days afterwards Dr. Ormerod also examined him, with the same result. His pulse was feeble. I could discover no evidence of lead-poisoning. I entered the case “Bilateral paralysis posterior crico-arytenoid, with chronic laryngitis—possibly syphilitic.” I ordered iodide of potass., gr. 10, t. i. d., also vapor benzoini, Throat Hosp. Pharm., and applied a solution of zinc chloride, gr. 30–3 i., to the larynx.

August 7th.—Patient says he feels something easier. I applied the interrupted current to each posterior crico-arytenoid muscle successively introducing a Mackenzie's electrode behind the posterior plate of the cricoid cartilage, the other electrode being placed over the course of the recurrent nerve of the same side. I afterwards repeated the application of zinc to the larynx.

11th.—Patient reports the noise at night much less; the catarrh is improving; repeated application of current and zinc.

18th.—Had not seen H. for a week; says he feels much better, and his friends tell him he has ceased to make the noise at night; the laryngeal catarrh still improving, but there is no alteration in the movement of the cords. Repeated current and zinc.

25th.—A small subcutaneous abscess had formed just beside trachea on left side; on opening it I found about 3i. of thick, greenish pus; catarrh still improving; no alteration in movement of cords; the patient did not wish the current, as his neck was tender; ordered a purgative and repeated zinc to larynx.

28th.—Patient says he feels much better; looks much improved, and in good spirits; abscess nearly healed; the left cord moves somewhat more from the middle line, but the right remains as before. Has continued taking the iodide steadily. Applied current and zinc.

Sept. 10th.—Having been working at some distance from town, H. was unable to come to the hospital until to-day. There was a very marked improvement; the movement of the left cord was much increased—the right moved some distance from the middle line, but much less than the left; the laryngeal catarrh was also much better; the patient still complained of dyspnoea on exertion.

Dr. Semon having returned to town saw the case, and, approving of the treatment adopted, it was continued as before.

38 *Use of the Hypodermic Syringe in Medical Diagnosis.*

Oct. 13th.—Saw H.; his work being at a distance, he was unable to attend to have the current applied, but had continued taking the iodide regularly. There was still an improvement in the movements of the cords, the left continuing to progress faster than the right; the catarrh had almost disappeared; there was still some dyspnoea on making exertion. I did not see the patient after this.

This is, I believe, the thirty-sixth recorded case of this condition. Burow gives thirty-five in his table, but he counts one case twice over, as it was under the care of two physicians at different times. At the end of his paper, however, he mentions that while engaged on his proofs another case has come under his notice, which brings his number again up to thirty-five.

I find only three cases in which a syphilitic etiology is given, in only one of which—Hansen's—is an improvement recorded. That my case had a syphilitic origin cannot, I think, be doubted, taking into consideration the distinct history, and the prompt effect of the iodide. The small abscess I do not consider had any bearing on the case, as it was quite superficial, and rapid in its formation and disappearance. I would also remark that a probable cause of the improvement was the early application of the patient for relief before the disease had made too decided an advance.

ART. III.—*Cases illustrating the Advantages attending the Use of the Hypodermic Syringe in Medical Diagnosis.* By DAVID DRUMMOND, M.A., M.D., Univ. Dubl.; Physician to, and Joint Lecturer on Clinical Medicine at, the Newcastle-on-Tyne Infirmary; Senior Physician to the Children's Hospital, Newcastle-on-Tyne; Lecturer on Physiology, Durham University.

IN an article on "The Routine Use of the Hypodermic Syringe as an Aid to Diagnosis," in *The Lancet*, Nov. 1st, 1879, Dr. Greenfield, in a measure, apologises for bringing such a subject before the notice of the profession, and doubts not that many "may consider any advocacy of its use a work of supererogation." Such an apology I think unnecessary, considering that few of the text-books in common use amongst students advert even in a superficial manner to the "needle" as an aid to diagnosis, and also that comparatively few physicians resort to it in cases of difficulty, preferring rather to remain in a state of uncertainty—in fact, like the ophthalmoscope, viewing it too often as an instrument for a special purpose,

and not to be brought into general use. That such is the case becomes apparent when the fact is instanced that in the Newcastle Infirmary—where many of the class in clinical medicine are “foreign” students coming from various schools, metropolitan (English, Irish, Scotch) and provincial (English), for the degree of M.B., Durham University—astonishment is often expressed at the way in which the needle is employed. The fact, then, that even a few “senior” men have not been accustomed to see the diagnosis verified by the withdrawal of fluid, cells, &c., shows beyond doubt the truth of the statement made above—viz., that the syringe is not in general use as an aid to diagnosis. The “needle” has been termed an aid to diagnosis—a term which suggests that its utility is subordinate and partial, and that the evidence which can be elicited by its use may, when thrown into the balance, weigh as an increment in the diagnosis one way or the other. Such a view is inaccurate and misleading, for oftentimes it happens that the information yielded by the syringe will cause the hitherto chaotic signs to range themselves into an intelligible form, pointing to an accurate diagnosis. Of this I am fully persuaded, that with the frequent and routine use of the “needle” would disappear, in a great measure, the apparent discrepancies between the diagnosis of the clinical physician and of the pathologist.

That a fine needle may be thrust into important vital organs without producing any untoward result, is a fact well known to all who are in the habit of employing it frequently. I have punctured the kidney, the lungs, and the liver, of necessity wounding the pleura and peritoneum, which serous membranes can, with ordinary precautions, be punctured without any risk—I certainly have never seen any harm done by the procedure.

The pain inflicted is but slight, and when the point of the needle is sharp, does not exceed that attending the administration of a subcutaneous injection. As the object of this communication is to instance cases wherein marked service has been rendered by the “needle,” and to urge its more frequent use, it is unnecessary to extend the preamble, and as a few cases will serve the purpose, it will be desirable to pick out those more obviously dependent upon its employment for a correct diagnosis.

CASE I.—In a well-marked case of aneurism (sacculated) of the arch of the thoracic aorta, springing from the junction of the transverse and descending portions, in a man, which pulsated in the second left interspace, causing a bulging of that portion of the chest wall, the left lung

posteriorly was absolutely dull on percussion. There was a history of pain over that region. On auscultation the respiratory sounds were almost inaudible; the vocal resonance, which was with difficulty tested, owing to paralysis of the right vocal cord causing partial aphonia, was markedly diminished. Dyspnoea was considerable. From the physical signs it was thought that most probably fluid occupied the left pleural cavity. The diagnosis was important not only as a matter of clinical interest by which the "class" would be benefited, but also as assisting materially in the *expressed* prognosis in the case. The history, as far as it related to the condition of lung, was rather one of phthisis than of pleurisy with effusion, the patient being much more emaciated than is usually found in cases of thoracic aneurism, even though complicated with effusion. In the North of England, where thoracic aneurisms are so common, it is not at all unusual to meet with them in cases of phthisis. At the same time, there was the duplex finger-post pointing to the direction of effusion—viz., absence of respiratory sounds and diminished vocal resonance. On puncturing the chest wall with a fine hypodermic needle, only a drop or two of blood was drawn off, showing the lung to be consolidated. Some weeks afterwards, on the case suddenly terminating by rupture of the sac into the left bronchial tube, the diagnosis was verified, the left lung being in a state of caseous consolidation, the sac having pressed on the left bronchial tube, almost occluding it, thus preventing the air from passing to the consolidated lung, thereby accounting for the diminished vocal and breath sounds. In this case the needle was of marked service, for had the information yielded by the ordinary methods of investigation been trusted to implicitly, and the diagnosis made of effusion, which was warranted by the physical signs present—viz., dullness, with diminished vocal and breath sounds, following pain in the side, which subsequently abated—the confidence of the "class" in the teaching of the schools and in the ability of the teacher would, I take it, have been considerably shaken had the thorax been tapped by the aspirator; but being accustomed to see the needle employed frequently, it was not thought strange that the diagnosis was withheld until the case had been fully investigated, and all the plans called into requisition which were likely to throw light on the condition.

CASE II.—A patient (male, aged thirty-one) suffering from great enlargement of the liver, the right lobe of which reached down to the crest of the ilium, was admitted into the Newcastle Infirmary, having, like the woman of old, "suffered many things of many physicians," who expressed themselves variously concerning his complaint—viz., pleurisy, with effusion pushing down the liver, abscess of the liver, amyloid disease, carcinoma of the liver, with effusion into the right pleural cavity, &c. The case, on admission, was viewed as carcinoma, though the diagnosis was not altogether easy, for the absence of distinct nodules (at first), of

jaundice and ascites, taken into consideration with the history, which was extremely doubtful, inasmuch as it failed altogether to tally with the *present condition*—being to the effect that the enlargement came on suddenly, *i.e.*, in a few hours, also that the patient had followed his employment (miner) to within six or seven weeks before admission—made the case difficult to fathom. The right lung posteriorly was markedly dull on percussion, the vocal and breath sounds being almost entirely absent, thus accounting for the diagnosis of effusion made by the earlier medical attendants. A puncture into the lung and liver (twice) settled the diagnosis of cancer of the latter organ, which was verified a week or two subsequently, the syringe drawing off a number of large, irregularly shaped caudate cells, with several nuclei and some round cells like pus. The diagnosis was materially assisted—in fact, was only rendered certain—by the use of the syringe.

CASE III.—A boy aged eight, was admitted, under my care, into the Children's Hospital, complaining of pain, especially when passing water, down the penis. He was considerably emaciated, and passed a large quantity of pus in the urine. The skin was dry, the temperature being continuously "sub-febrile." Now and again a rigor initiated a period of prostration, with loss of appetite, which lasted a few days. It was thought that he was suffering from stone in the bladder, but on being carefully sounded by Dr. Page, one of the surgeons to the hospital, no stone could be discovered. Whilst under chloroform it was noticed that the left kidney was somewhat larger than the right—*i.e.*, it could be grasped more easily—and although no pain had ever been complained of in the lumbar regions, or in any part of the abdomen, thinking that the kidney might be the origin of the pus, as the bladder was apparently healthy, I punctured the left kidney from behind, and succeeded in drawing off a considerable quantity of pus, mixed, as a matter of course, with blood. A few days subsequently, convinced of the presence of pus, I aspirated the left kidney and drew off six ounces of purulent matter mixed with urine and blood—a far larger quantity than was anticipated from palpation, the region being apparently normal—nor was any complaint of pain made even on rather rough manipulation. I think it will be acceded that by no other means could the lesion have, with certainty, been localised. Since the puncture the boy has improved considerably in his appetite and weight, which alteration has been accompanied by an amelioration of the pain.

Many cases, quite as much to the point, could be adduced; but, fearful of trespassing too much, I have confined myself to a few in which the diagnosis was almost wholly dependent upon the information supplied by the syringe, and have not touched at all upon the great advantage attending its routine employment.

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PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Clinical Medicine: a Systematic Treatise on the Diagnosis and Treatment of Diseases, designed for the use of Students and Practitioners of Medicine. By AUSTIN FLINT, M.D., &c. 1879. Pp. 785.

SECOND NOTICE.*

A DISTINCTION is very properly made between constipation and costiveness, the latter signifying incomplete evacuation. The directions for treatment and for prevention are excellent. "Obstipation," in which the intervals between the acts of defecation extend to weeks and months, is attributed to paralysis of the large intestine, the bowel being greatly enlarged, and, as we have in one instance witnessed in the cadaver, its surface even, the sacculi and longitudinal bands having disappeared. In cases of obstruction cathartics are to be avoided; the treatment should consist in opiates, with soothing applications and injections.

Among the intestinal parasites, of which and of the symptoms caused by their presence in the human body a concise account is given, the "ankylostomum duodenale" and the "trichina spiralis" are pretty fully described, and the diseases (Egyptian or tropical chlorosis, and trichinosis) produced by their ravages briefly sketched.

The organic diseases of the liver, especially cirrhosis, cancer, and hydatids, are well though briefly treated of, especially in regard to differential diagnosis, and the appropriate treatment is suggested. In the notice of functional diseases of the liver the author judiciously remarks that the mode of development of jaundice may serve as an important element of distinction as between biliary obstruction from "blocking" of the common bile-duct, and from pressure *ab extra*—jaundice due to the former being rapidly developed and (in most cases) slowly disappearing, whereas that from obstruction outside the duct is gradually developed and usually permanent. In reference to the diagnosis of the nature of the contents of a dis-

* Continued from Vol. LXVIII., page 466.

tended gall-bladder, the author declares that "in all cases of doubt there can be no risk (?) in exploring by means of a small canula or hollow needle." Conclusive evidence of adhesion of the gall-bladder to the abdominal wall having been obtained, there could be no objection to this procedure, but in the absence of such (and this applies to the vast majority of cases) the practice suggested would be in the highest degree dangerous, and the advice implied, unaccompanied as it is by this qualification, demands an emphatic protest from us.

Section 4 (Diseases of the Urinary System) is one of the best in the book. The directions for examination of the urine and the diagnosis of uræmia are clear, well arranged, quite *au courant* with present knowledge, and for clinical guidance sufficiently full. Our approval of this article is qualified by few exceptions, and chiefly that which applies to the author's recommendation of opium as a means of averting uræmic coma and convulsions. This teaching is, to say the least, eminently heterodox, and we venture to submit that till the author had adduced positive, if not conclusive, evidence in support of it, he should not have given it a place in a work designed "for the use of students and practitioners of medicine."

Acute parenchymatous nephritis "may be caused by the scarlatinous contagium without being preceded by scarlatina" (?). In some of these patients, who were adults, scarlatina was had in early life. Exploratory puncture is recommended with a view to diagnosis in hydronephrosis. With the exception of the passages above quoted, to which we strongly object, the entire article on the diagnosis and treatment of diseases of the kidneys is excellent, and contains a full *résumé* of the subject.

Section 5.—Diseases of the Nervous System. Under the head of "General Observations" a comprehensive and clear exposition of the common characteristics and affinities of these diseases is given. An interesting case of narcotism from an overdose of morphia (6 grs.), taken by a medical man by mistake for quinine, is narrated in detail (p. 518), as published by the patient, who attributes his recovery to the free use of atropia.

Treating of coma from intra-cranial congestion, the author includes amongst the symptoms of thrombosis of the superior longitudinal sinus (of the dura mater) exophthalmia due to post-ocular venous engorgement; but, exhibited in the connexion mentioned, exophthalmia should be regarded as evidence of "block" in the petrosal sinuses (one or both), or in the corresponding lateral

sinus, into the former of which the cavernous sinus debouches, not into the superior longitudinal, with which it has no anatomical connexion whatever.

Paralytic diseases—the various paralyses, encephalic and spinal—are discussed in brief with remarkable perspicuity. A complete *résumé* is given of the most recent views of Charcot and Erb in this rapidly progressive department of pathology—indeed, the *précis* of this subject given in the work before us is the best with which we are acquainted. The sketch of cerebro-spinal sclerosis and that of paralysis agitans are especially good, and their points of resemblance and contrast are well brought out.

Myopathic paralyses—in addition to the two forms of myopathic paralysis ordinarily regarded as such—namely, “progressive muscular atrophy” and “pseudo-hypertrophic paralysis,” both of which are well described, the singular and rare affection named “progressive facial atrophy”—is included in this category, and briefly sketched. Though not a paralysis in the strict sense it is “myopathic” and well paired with Cruveilhier’s palsy. One side of the face only is affected; there is no impairment of sensibility, and no motor paresis save what may be attributed to atrophy of the muscles; the structures (even the bones) all undergo a process of wasting, and the contrast between the two sides of the face is ultimately most singular.

Under the head of Spasmodic or Convulsive Affections, a good description of rabies (hydrophobia), and a complete epitome of its treatment—preventive and curative (if cure may be mentioned in reference to an incurable disease)—are given.

Sciatica is regarded by the author as a simple (functional) neuralgia. We believe it is, in most instances, an example of sacral or sacro-sciatic rheumatism, engaging the tendinous and ligamentous structures in this locality, and the sheaths of the emerging sacral nerves; and we have found anti-rheumatic treatment—general and local—the most efficacious in combating it. Muscular rheumatism, including lumbago, is likewise classed with the neuralgic affections; we have no doubt it is most frequently subacute rheumatism, consequent upon accidental strain or local chill. The best example of pure myalgia we can adduce is that which precedes and accompanies spasmodic asthma; the muscles are the seat of pain when in action, but not tender to pressure. In lumbago and other examples of muscular rheumatism, the affected muscles are acutely and painfully sensitive to pressure.

We cannot concur in the author's opinion as to the *immediate* cause of *delirium tremens*—namely, the sudden and total withdrawal of alcohol. This was the old doctrine—propounded, we believe, by Bateman—but it is now accepted by few physicians. We have witnessed many examples of temporary melancholia with or without delusions, from the suspension of the customary stimulant, but *delirium tremens* in the typical form, characterised not only by the well-known nervous phenomena and the usual craving for alcohol, but likewise by injected conjunctivæ, a loaded tongue, and the peculiar fetor from the breath and skin distinctive of alcoholic saturation, we have not seen except as a direct and immediate result of “drink.”

Mental diseases scarcely find an appropriate place in a text-book of clinical medicine. The best excuse for their introduction in such a work is that, if not thus presented to the student in connexion with the subjects of his ordinary study, they are likely to be totally neglected by him. This would, no doubt, be a deplorable defect in a medical curriculum—hence we are disposed to regard with approval the insertion of a brief but (for medical practitioners) sufficient notice of mental diseases in Dr. Flint's text-book.

Section 6.—Fevers and other General Diseases. The notice of typhoid fever is excellent, and the directions for conducting a case of this disease through its several stages highly commendable. We are quite of the author's opinion that typhoid cases may be treated in the general wards of an hospital with perfect safety to the other patients there; we have repeatedly so treated them, and have never witnessed an example of the disease communicated in this way, nor indeed under any circumstances by simple proximity. The treatment of typhoid and typhus cases in the same ward is infinitely more objectionable, from the risk to the former of contracting typhus. Typhus is very briefly, and, its importance considered, we think inadequately noticed.

Among the objective symptoms of cerebro-spinal fever, two of the most striking and significant, though least constant, are not mentioned—namely, dark purple discoloration of large portions of the cutaneous surface (we have seen in the epidemic of 1867 nearly the entire surface so tinted in many cases), and clonic convulsions.

Having now brought to a conclusion our review of this important work, we feel bound to say that the author has accomplished in a creditable manner the difficult task of producing, not only a complete but a useful text-book of modern medicine. Its merits are

many and great—its faults, for a work of such range and dimensions, few, and, with the exception of two or three points of questionable practice criticised in our former and in the present notice, comparatively trivial. We heartily congratulate the veteran author on the completion of his undertaking, and strongly recommend his text-book as not only the most recent but the most complete hitherto published on clinical medicine.

On Bronchitis. By D. J. HAMILTON, M.B., F.R.C.S., Edin.; L.R.C.P., Edin.; Demonstrator of Pathology, University of Edinburgh; Pathologist to the Edinburgh Royal Infirmary.

THIS is an excellent contribution to the subject, and by one who is evidently skilled in the details and accessories of pathological studies. It conveys a knowledge of what takes place in the structures affected, of how their mechanism is injured, and of why recovery is often so tedious, and very frequently incomplete. The reprint deals with acute bronchitis, chronic bronchitis, and vesicular emphysema and collapse of the lung as complications of bronchitis. We cannot refrain from expressing a hope that the author, having made such a good beginning with the affections of the air-tubes, will continue his researches into other territories of pulmonary pathology.

RECENT WORKS ON DISEASES OF THE KIDNEYS.

1. *A Contribution to the Study of the Treatment of the Acute Parenchymatous Nephritis of Pregnancy.* By WILLIAM L. RICHARDSON, M.D., Boston.

THIS pamphlet is a reprint from Vol. III. of the Gynæcological Transactions, 1879. As the author states at page 16, the paper does not, of course, "pretend to deal with the problem of what causes an attack of acute parenchymatous nephritis during the course of pregnancy, or why, owing to the existence of that disease, eclampsia should occur; but it suggests the question as to whether the daily quantity of urine secreted may not be a guide as to the best method of treating such cases." The point of this paper is the need of attending to the *quantity* of the daily urinary secretion, as it is a guide by which to estimate properly the *extent* of the danger; the quality of the urine is enough to indicate the liability

to danger. Several of the fifteen cases which accompany the paper were treated with pilocarpin, in doses of one-sixth of a grain, with the effect of producing copious diaphoresis. The author comes to the conclusion that if, despite all our efforts, the amount of urine is very small and constantly lessening, no matter whether at the same time the general symptoms of danger are increasing or not, we should not hesitate at once to induce premature labour, and thus avoid the occurrence of an attack of eclampsia, which is sure to come whenever the daily urinary secretion falls below a certain amount.

2. *The Functional Stage of Granular Kidney.* By ROBERT SAUNDBY, M.D., Edin.; M.R.C.P., Lond.; Assistant-Physician to General Hospital, Birmingham. Birmingham: White & Pike. 1879. Pp. 13.

IN this paper, which is a reprint from *The Birmingham Medical Review*, Dr. Saundby puts forward views which have occurred to more than one who has combined the duties of a pathologist with those of a clinical physician—that the granular kidney is often found when least expected, and that it is the final anatomical expression of long antecedent causes. Dr. Saundby has found the kidneys to be granular in 18 per cent. of all his autopsies, excluding children, and by far the larger proportion of cases in which the kidneys were found so did not come to him with a diagnosis of Bright's disease. His experience also leads him to say that this condition—granular kidney—plays by far the largest part in the pathology of persons past middle life, being the latent explanation of the rheumatic pains, lumbagos, anginas, dyspepsias, headaches, vertigos, bronchitic attacks, pleurisies, cardiac failures, and apoplexies so frequently met with. The author holds that Bright's disease—restricting this term in accordance with modern views to the granular kidney—originates in an essentially chronic disturbance which takes half a lifetime in many cases to effect the structural changes which are capable of anatomical demonstration. This disturbance is primarily in the digestive organs, and results in the imperfect oxidation of nitrogenous material, which material, circulating in the blood, has a directly stimulating effect upon the kidneys (Heidenhain), maintaining in them a constant state of functional hyperæmia, and by increasing the general capillary resistance, raises the systemic blood-pressure, so as to keep up a permanent strain on the organs of the circulation. The functional

stage of granular kidney, as we gather it from this paper, is indicated by a condition of high arterial tension, to which Dr. Mahomed (*Guy's Hosp. Reports*, Vol. XXIV., 1878) has particularly drawn attention, and by the existence of albuminuria in young people, which latter is far more common than is generally supposed, especially when great care is used in searching for the albumen.

Dr. Saundby has shown in this paper proofs of much ability in working at the pathology of renal disease, but we do not quite understand the use of the title of the essay, as it seems to us the *function* of the kidney is seriously concerned in every stage of granular kidney, until it is at last so compromised that death ensues; and, besides, the term functional is in general use as an antithesis to organic, and taken to imply a not necessarily fatal, disease. We do not gather from the paper that its object is to press the view of an early and curable stage of granular kidney, but it may well be that the modesty of the author restrains him from forcibly urging his labour to be regarded from this point of view.

Urea and Phosphoric Acid in the Urine in Anæmia. By THEODORE DEECKE. From *The American Journal of Insanity* for July, 1879.

THE author draws the following conclusions in regard to the general change of matter in anæmia, as far as its amount is indicated by the amount of urea and phosphoric acid eliminated through the kidneys:—

“1. In primary chronic anæmia there is a remarkable decrease in the amount of urea and phosphoric acid in the urine, which indicates grave disturbances in the nutrition of the tissues, and a diminution of the general change of matter in the system.

“2. The diminution in the general change of matter reaches its lowest point in chronic anæmia with dementia, and next to this in cases connected with subacute mania, with a tendency to dementia.

“3. The condition of morbid mental excitement in primary chronic anæmia is coexistent with a decrease in the general change of matter, and seems, to a certain degree, to impede the processes of waste and repair.

“4. In cases of anæmia of a more acute character with a favourable physical and mental prognosis, there is a remarkable increase in the general change of matter during rest.

“5. In the case of acute anæmia the amount of the general change of matter was not affected by the considerable loss of blood.

“6. Secondary anæmia is combined with a morbid increase in the general change of matter at the cost of the tissues of the body.

“7. In regard to the treatment of anæmia, the conclusions drawn from the tables would indicate the great therapeutical value of rest, bodily and mental.”

Manual of Practical Anatomy. By J. COSSAR-EWART, M.D., F.R.C.S.E., F.R.S.E.; Lecturer on Anatomy, School of Medicine, Edinburgh; formerly Demonstrator of Anatomy in the University of Edinburgh; and Conservator of the Zoological and Anatomical Museums, University College, London. London: Smith, Elder, & Co.

THE method of learning anatomy which the author recommends will best be understood by the following extract:—

“In order to dissect with advantage, the dissector should plan out his work the night before, making rough outlines indicating the principal structures to be met with. When the dissection has been made these outlines should be filled in, and all points likely to be forgotten noted on the other side. On the evening of the same day the sketch should be completed, and the student should make sure that each muscle and vessel is thoroughly understood. A dissecting manual or ‘Quain and Sharpey’s Anatomy’ may be used for reference, and any point not mastered should be seen next morning.”

This graphic method of learning anatomy is undoubtedly of very great value, as no student can have a sound practical knowledge of the anatomical relations of structures unless he can draw a diagram, no matter how rough, by showing their relative positions. Dr. Ewart evidently recognises the inutility of reading much in anticipation of work, but he recommends that immediately after dissection careful study should be made while the memory of the appearances is still fresh, and when any mistakes that have been made can readily be detected. His manual is intended for use in the dissecting-room, and he gives very concise information as to the method of dissecting the various regions. He also lays, in our opinion, very proper emphasis on the importance of observing the positions of parts when simply exposed and before they are dissected. He says—“In this anatomically dirty condition they most nearly approach what we find in surgical operations, and they lie in a more natural state than when all investing and connecting fascia

and fat have been removed." The descriptive portion is clear, concise, and gives all the important information required by a student when dissecting in a way that is readily available and free from prolixity. A series of twenty plates in outline are appended, which, if filled up in the way indicated by the author, will afford a very useful atlas; and the fact that they have been in part executed by the dissector will serve to impress on his mind the appearances they are meant to convey.

We would draw special attention to Plates XV. and XX., as affording important assistance in learning the anatomy of the hand; but in Plates XII. and XIV., which illustrate the front of the forearm, the close proximity of tendons, nerves, and vessels in indistinguishable outline so tends to confuse the diagrams, that we consider they would prove rather a source of embarrassment than assistance to the student.

On the whole, the work is of unquestionable utility, and if largely used would assist in developing a sound practical knowledge of anatomy; but we fear that the price (4s. 6d. for the present number, which relates only to the upper extremity) will prevent its being as popular with students as it certainly deserves to be.

A Manual of Scientific Terms: Pronouncing, Etymological, and Explanatory. By the REV. JAMES STORMONTH. Edinburgh: MacLachlan & Stewart. 1879. 8vo. Pp. 488.

ACTUATED by a laudable desire to help junior medical students and others in their reading, the reverend author of this manual has attempted—and with a fair measure of success—to furnish such lists of terms in Botany, Natural History, Chemistry, Anatomy, Medicine, and Veterinary Science, as may be met with in the student's ordinary text-books and in the current literature of the day. Each term is printed in heavy Egyptian type, and is followed by its respelling in simple phonetic and accented characters, by its Greek or Latin or other etymologies or root-words, and by a succinct definition and explanation. At the end of the book are useful lists of the trivial or second terms of specific names, of prefixes, of postfixes, and of abbreviations. Mr. Stormonth might have omitted the obsolete table of weights and measures on page 487.

It was to be expected that in a work of this kind by a non-medical author some subjects would not be as fully dealt with as others; and accordingly we find that, while the list of botanical

terms is tolerably exhaustive, there are many omissions of chemical and medical words. Nor can we express an unqualified approval of the manner in which Mr. Stormonth has treated many of the chemical and medical terms which are included in his list. For example, an "alkali" is defined to be "a substance which has properties the reverse of an acid, and which combines with an acid, so as to neutralise it and form a salt." In seeking for an explanation of this somewhat negative definition, the reader naturally looks back to "Acid," but in vain, for that term is altogether omitted from the manual. Again, "bronchial breathing" is explained to be "a term applied to the sound, *resembling that produced by blowing through tubes*, which *replaces* the normal vesicular respiratory murmur, when the ear is applied over a solidified portion of lung." We strongly object to the italicised words in this definition. To speak of bronchial breathing as a sound which resembles that produced by blowing through tubes is sadly indefinite. Bronchial breathing does not *replace* vesicular breathing, but is heard when and where the latter is either feeble or absent. Thus, in the interscapular region bronchial breathing may become audible in health, and that, too, necessarily without any solidification of the lung. Mr. Stormonth defines "bronchophony" (which, by the way, he spells "broncophony") to be "the peculiarly distant (? distinct) resonance of the voice heard in similar circumstances to the preceding" (i.e., bronchial breathing), and he adds this further extraordinary definition—"the muffled and indistinct speech of anyone labouring under a bronchial affection." "Cegophony," or "bleating bronchophony," finds no place in the manual.

The author is sometimes not happier in his etymologies than he is in his definitions of medical terms. "Pneumothorax" he derives from "Gr. *pneumon*, the lungs (*sic*); *thorax*, the trunk of the body!" We admit that the faulty construction of the word "pneumothorax" partly condones Mr. Stormonth's pitiable failure in this instance. The word should be "pneumatothorax," from *πνεῦμα*, "air." Had it been so written, Mr. Stormonth would scarcely have fallen into error as to the first part of the word. His translation of *θώραξ* is, to say the least, original.

"Podagra" (on the same page with "pneumothorax") is said to be derived from the *Latin and Greek*—namely, "from '*pous*,' a foot, '*podes*,' feet; '*agra*,' a seizing." Why insert the words "Latin and" here?

"Pyrexia," *fever*, is wrongly derived from *πυρετός*. It is really

an erroneous form of *πύρεξις*, *feverishness*, from *πυρέσσω*, fut. *πυρέξω*, *to be feverish, be in a fever*. No doubt *πυρέσσω* is itself derived from *πυρετός*; still it is as well to preserve the distinction between fever in the abstract and the febrile condition (*pyrexia*).

We do not, however, quote these *laches* in any spirit of unfriendliness or of carping criticism. The book has much to commend it, and its intrinsic merits only make us wish that the author had associated with himself in its compilation a physician of literary acquirements.

PHYSICAL DIAGNOSIS.

1. *The Physical Examination of the Chest in Health and Disease.* With Illustrations on Wood. By REGINALD E. THOMPSON, M.D. Cantab., F.R.C.P.; Senior Assistant-Physician and Pathologist to the Hospital for Consumption and Diseases of the Chest at Brompton. London: Henry Renshaw. 1879. Pp. 260.

FOLLOWING in the footsteps, amongst more recent writers on the subject, of Flint, Gee, and Guttman, Dr. Thompson has produced a manual of auscultation and percussion, which, for the most part, embodies the teachings of the authors we have named, and also contains some valuable observations resulting from his own wide field of experience. In the arrangement of a work on the Physical Examination of the Chest, it is natural that different authors should follow a similar plan. Dr. Thompson, however, by introducing a number of synoptical tables, and by adopting in some places an alphabetical arrangement, has, we think, done much to render his book more attractive and generally useful to the student than any of its predecessors. And the numerous excellent illustrations it contains also tend in the same direction. The author has a happy way of illustrating the causes of certain phenomena by simple experiments and ascertained facts—thus impressing the phenomenon itself upon the mind, while, at the same time, he throws some light upon the way in which it is produced.

Dr. Thompson lays stress upon complete suppression of the expiratory sound as diagnostic of an old contracting cavity. He explains this sign, which he asserts is by no means infrequent, as depending upon the contraction of the tube communicating with the cavity, which will admit air in free expansion, but soon shuts, so as to prevent at least any sound of expiration. He also

mentions "a dry, papery quality of the vesicular murmur—an early indication," in his opinion, "of syphilitic pulmonary disease." This is a verbal description, which, unfortunately, does not convey any very exact meaning. The disease itself he looks upon as a specific lung affection, with pathognomonic distinctions, and by no means rare.

Referring to the views held by Dr. Hudson as to the cause of Skoda's tympanitic note in cases of pneumonia of the upper lobe, Dr. Thompson thinks that as long as the resonance is confined to the bronchial regions—that is, close to the sternum in the second interspaces—the resonance may be attributed to condensation of the lung over the large tubes. But, in Dr. Thompson's judgment, when the sound is noticed in apex pneumonia, it is generally towards the end of the disease, when the patient and lung are recovering; and the explanation he gives is briefly as follows:—The consolidated lung is increased in bulk very much when the upper lobe resolves, and the exudation is removed; the pressure of the atmosphere must force the surface of the lungs to meet the walls of the chest, which are thrown forward; hence the air-sacs are over-distended, and give a hyper-resonant note. A similar explanation is given for the resonance so often met with in cases of pleuritic effusion. The walls of the thorax being projected forward by the bulging of the fluid outwards, the lung has to expand to meet the walls, and hence the note of distension above. It may be mentioned that Guttman speaks of the tympanitic percussion-sound in both the above cases as due to *diminished* tension of the lung substance.

We should be glad to see Dr. Thompson's excellent manual in the hands of all "practising" medical students.

2. *A Manual of Physical Diagnosis.* By FRANCIS DELAFIELD, M.D., and CHARLES STILLMAN, M.D. New York: William Wood & Co. 1878. Pp. 30.

THIS is a concise but rather bald account of the methods of examination of the thorax, and a statement of the results elicited thereby in health and in certain diseased conditions. Its chief value consists in its having bound up with it well-executed superimposed plates, on the plan of Dr. Ferber's diagrams, showing the relative position of the contents of the thoracic and abdominal cavities. The text also is interleaved, so that it may be taken into the wards and used as a note-book as well as a guide, with much advantage.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART III.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE
COLLEGE OF PHYSICIANS.

SESSION 1879-80.

HENRY H. HEAD, M.D., President.

GEORGE F. DUFFEY, M.D., Honorary Secretary.

Wednesday, December 3, 1879.

DR. HENRY KENNEDY in the Chair.

Cerebral Apoplexy—Abnormality of Occipital Bone.

DR. QUINLAN exhibited the brain and portion of the base of the skull of a car-driver aged sixty. Two years before his death he had had an attack of paralysis, accompanied by coma, from which he completely recovered. He was subject to frequent "bilious" attacks, and was well known at St. Vincent's Hospital Dispensary. During convalescence from one of these attacks, he suddenly relapsed; on the following day he became comatose, and a week afterwards died. The chief lesion found was a large clot occupying the left cerebral ventricle, which had completely disintegrated the brain in its neighbourhood. The clot also extended into the opposite ventricle. Dr. Quinlan directed particular attention to two abnormal, bony, spur-like projections on the internal surface of the occipital bone, at each side of the foramen magnum. These first attracted notice by their giving rise to some difficulty in removing the brain, in consequence of their tightly grasping the pons. He had never, in a large experience, seen, nor could he find any reference to, similar growths.

Perforation of Colon.

DR. QUINLAN also exhibited an example of perforation of the large intestine taken from the body of a woman aged sixty-three. The perforation was situated about the centre of the transverse colon. There

were no signs of ulceration, but the intestines were enormously distended, and the peritoneal cavity contained faecal matter and the seed of a small fruit. The history of the case, which during life presented the usual symptoms of intestinal perforation, was deficient.

On the Occurrence of Indigo-producing Substances in the Urine.

PROFESSOR J. M. PURSER made a communication on this subject, of which the following is an abstract:—

In the digestive tube two kinds of processes take place:—1. Digestive processes effected by the agency of unorganised ferments formed by the various glands; 2. Putrefactive processes effected by the action of organised germs which are swallowed with the food.

Those processes of putrefaction or fermentation in which hydrogen is developed cannot occur so long as the reaction is acid, consequently in the stomach under normal circumstances they are not met with, but in cases where from disease the acid secretion is lost putrefaction may occur with development of H_2 , CO_2 , H_2S , &c.

In the small and upper part of the large intestine, where the secretion is alkaline, putrefactive processes undoubtedly occur.

The pancreas is the chief digestive gland whose secretion is active in the intestine. Under its influence starch is converted into dextrin and sugar, fats are split into glycerin and fatty acids, and albumins are transformed successively into a globulin-like body and peptones. From these are further formed leucin, tyrosin, hypoxanthin, aspartic acid, &c. These products of pancreatic digestion can be obtained in experiments outside the body when precautions are taken to prevent the access of putrefactive germs, and in the process there is no development of H_2 , H_2S , or of ill-smelling substances. If, however, the germs of putrefaction are allowed to contaminate the digesting mass, a number of products are formed besides those mentioned, the more important of which are indol, phenol, H_2 , H_2S , and ammonia.

In the intestine and in putrefaction carried on outside the body, but in presence of digestive ferments, the process advances much more rapidly than under the action merely of putrefactive germs. The reason of this is that the earlier stages of putrefaction and of digestion are the same or nearly so. These stages are gone through more quickly by the digestive than by the putrefactive ferments, and consequently the pure putrefactive actions can start from a more advanced stage than when they have themselves to perform the entire process.

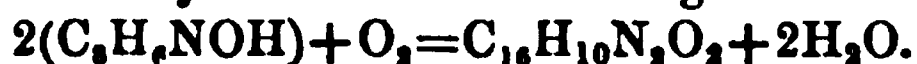
It is of interest to know to what degree the putrefactive processes occur during life, and the fact that some of the products of putrefaction are absorbed from the intestines, and appear, more or less altered, in the urine, seemed for a time to promise a mode of determining the degree of putrefaction in the interior of the body. Although further research

has shown that the condition of the urine is not such a certain index as was supposed of what is going on in the intestines, yet, nevertheless, there are many facts of great interest connected with the elimination by the kidneys of the products of intestinal putrefaction.

One of the most remarkable products of intestinal putrefaction is indol. This substance is crystalline, melts at 52° , and has the chemical composition represented by the formula, C_8H_7N . It has a disagreeable faecal odour. It can be got by ordinary putrefaction of albumins, by heating albumin with water to 200° , or by fusing it with caustic alkali. It cannot be got by the action of acids or reducing means. This substance, when formed in the intestine or introduced in the food, or when injected into the subcutaneous tissue, reappears in the urine as a body which, when acted on by acids and oxidising means, is converted into blue indigo. This indigo-forming substance was at first supposed to be identical with indican, the indigo-forming substance of plants, and which is a glucoside. Hoppe-Seyler, however, threw doubt on this by showing that the vegetable indican is much more readily decomposed than the indigo-forming substance of the urine. Baumann and Brieger* have recently studied with great success this question. By feeding a dog with indol they obtained large quantities of the urinary indigo-forming substance, and find that it is the alkaline salt of indoxylsulphuric acid, the ether sulphuric acid of hydroxylised indol. It is a crystalline substance, having the formula, $C_8H_6NSO_4K$. By the action of hydrochloric acid in the presence of water it is split up into indoxyl and sulphuric acid—



By oxidation the indoxyl is converted into indigo—



Indoxyl.

Indigo.

This substance is greatly increased in the urine in certain morbid conditions—such as obstructions in the small intestine, peritonitis, and paralytic conditions of the bowel. It is excreted in large quantities also in many cachectic conditions which do not directly involve the intestine. It is not increased in simple constipation or when the obstruction is seated in the large intestine, unless this obstruction lead to peritonitis or paralytic distension of the small intestine. It is easily tested for by the method of Jaffé. Equal parts of urine and hydrochloric acid are mixed together; then a saturated solution of common bleaching salt is added cautiously, drop by drop, until the maximum of blue coloration is obtained. If the urine be then shaken up with chloroform the indigo may be extracted, and a fair estimate of its quantity arrived at.

Another substance developed in the intestine by putrefaction is skatol. This body, recently discovered by Brieger, has as yet been found only in human faeces. It is closely allied to indol, and has like it a faecal smell.

* *Zeitschrift für physiologische Chemie.* III. 254.

It is crystalline, but melts only at 93.5° . The chemical composition is not yet perfectly known, but it is probably $C_{10}H_{11}N$. It is hence an ethyl indol. It is not known whether this substance appears in the urine. When injected into the subcutaneous tissue of rabbits, the urine gives a violet precipitate with hydrochloric acid and chloride of lime. This is, however, not indigo, and does not sublime.

In the urine of the herbivora (cow, horse, &c.) a substance exists in considerable quantity which, on treatment by acids, yields phenol; this phenol-yielding substance exists also in the urine of men. It has been shown that phenol is formed in the putrefaction of albumin, and Brieger has found phenol in the intestinal contents. Baumann has shown that this and the phenol which is formed in the intestine consists mainly of paracressol, and only in small proportion of actual phenol; while Weyl has shown that paracressol results from the putrefaction of pure tyrosin. In a recent paper^a Baumann has shown that when an animal is fed with paracressol, while part of this substance passes into the urine as alkaline paracressol sulphuric acid, a considerable quantity is converted in the system into paroxybenzoic acid, and that paroxybenzoic acid in the system or by putrefaction is in part split into phenol and carbonic acid. Hence the phenol, which occurs in the urine as alkaline phenol sulphate, is probably derived from the further putrefaction of the tyrosin formed in the intestine, and passes through the stages of paracressol and paroxybenzoic acid. The method of examination of the urine for phenol consists in acidulating strongly with sulphuric or hydrochloric acids and distilling. To the distillate bromine water is added as long as any precipitate or turbidity forms. If phenol be present a yellowish-white crystalline precipitate of tribromide of phenol is formed, which may be collected and weighed, and from which it is easy to calculate the quantity of phenol present. It was at first supposed that the quantities of the indigo-forming and phenol-forming substances present in the urine ran parallel to one another. This has, however, been shown by Brieger not to be the case; and in some cases in which the indigo-forming substance was present in excessive quantity the writer has found phenol altogether absent.

DR. WALTER SMITH said that Dr. Purser had given an able summary of their knowledge in a matter of considerable practical and physiological interest. There was reason to believe that in certain obscure cases of internal malignant disease the application of the discoveries in question might assist their knowledge very much. It was noteworthy that one of the products of internal decomposition was one of the most powerful arresters of decomposition when developed outside—namely, carbolic acid. With reference to the special question to which he addressed himself—namely, the occurrence of the indigo group of bodies in urine—it was necessary, in applying Jaffé's test with hydrochloric acid and

^a *Zeitschrift für physiologische Chemie.* III. 250.

chloride of lime, to be very cautious in adding the chloride of lime. If we do not add enough, all the indigo will not be thrown down; if we add too much, the colour will be bleached out at once. Again, if we omit the chloride of lime and boil the urine with hydrochloric acid alone, the urine will turn a dark brown or red colour in many cases of carcinomatous disease. He agreed with Dr. Purser that hasty assumptions had been made as to the occurrence of indican in urine. It was one thing to say that there was an indigo-yielding body in urine, and another to assume its identity with the indigo-yielding substances in leguminous and other plants. He did not think that in pathological cases the occurrence of indican had been demonstrated, although the production of indigo blue had. It was important to recognise the existence in urine of two distinct classes of substances. One consisted of the pigmentary bodies to which it owed its colour before treatment with any agent; the second class of bodies should be recognised as chromogenous, or colour-yielders, for it was a notorious fact that many urines which were nearly colourless might be made by chemical treatment to yield a large amount of pigmentary substances; and therefore it was necessary to distinguish between the pigments in urine and the chromogenous or pigment-yielding substances. In urines rich in indigo-yielding substances, and yet totally deficient in bile, he had several times obtained a very distinct green reaction by nitric acid; and it deserved to be more widely known than it was that urine rich in indican might yield a green with nitric acid that was almost indistinguishable from the green afforded by biliary pigment. He believed the cases in which an excess of indigo-forming substances was found in the urine were especially cases of carcinomatous disease and other serious cases of malnutrition. As far as his own experience went, excess of indigo-yielding substances had come under observation in three forms of disease—namely, carcinoma of the œsophagus, intussusception of the ileum, and pleural effusion.

Carcinoma of the Œsophagus.

DR. WALTER SMITH exhibited a specimen of carcinoma of the œsophagus. At first he took it to be a case of carcinoma of the cardiac end of the stomach, but a *post mortem* examination disclosed it to be carcinoma of the lower third of the œsophagus. It was taken from a woman sixty years of age, whose previous health had been good, and whose first symptoms of illness dated four months previous to her admission into the hospital. These consisted of burning pain in her stomach, heartburn, waterbrash, and pains in her back and shoulders; her food was vomited as soon as it was taken, and what she threw up was accompanied by a ropy mucus; she had severe pain in the stomach, and, when swallowing, pain between the thyroid cartilage and the sternum. She was emaciated, and was for some time sustained by

nourishing enemata, which were with great difficulty retained. She died on the 1st of November. It was thought that there was a cancerous mass in her abdomen, as during life there was a hard tumour occupying the epigastric region. On a *post mortem* examination, however, after all the intestines had been removed, it was discovered that the supposed tumour was an example of an extremely forward curvature of the lumbar vertebræ, which had the effect of throwing the colon forward. The diagnosis of gastric carcinoma was then found to be wrong, and the disease was proved to be carcinoma of the lower end of the œsophagus. He desired to call attention to the close similarity which this displacement of the viscera presented to the tumour which accompanied gastric or peritoneal carcinoma. The rectum and the large intestines were remarkably contracted; they were extremely small, being scarcely thicker than his thumb, which explained the great difficulty she had in retaining the enemata. An examination of the growth in the œsophagus, both in the recent state and after hardening, showed that it was a flat-celled epithelioma, as had been usually found to be the case. There has been a curious difference of opinion on this point, but the most recent article on the subject by Ziemssen and Zenker shows that almost all cases were flat-celled epitheliomata. Ziemssen found that out of 18 autopsies of this disease, 17 occurred in males and only 1 in a female.

The Society then adjourned.

BERLIN INTERNATIONAL FISHERY EXHIBITION, 1880.

THE King of Saxony has just placed at the disposal of the Exhibition Commission an extra special prize, open to all nations, to consist of silver plate, for the best practical scheme for rendering harmless to fish in rivers and lakes the refuse from factories, and sewage from towns, falling into the same. Although the prize thus offered is intended for a complete solution of the question, partial solutions are not to be excluded from consideration by the jurors, who will also be instructed to decide as to the plan deemed second in order of merit. Such plan is to receive a prize of 600 marks from the Minister of Agriculture, if possessing advantages over the systems now in use. . . Proposals from British subjects (which may be in print or manuscript, and accompanied or not by drawings) must be delivered prior to March 1st, 1880, to Mr. Edmund Johnson, *Commissaire Délégué*, at the London Offices of the Exhibition, 1, Castle-street, Holborn. Apparatus and models intended to illustrate any of the plans so submitted will have to be forwarded subsequently to the exhibition (which will be opened on April 20th)—it being requisite, however, to apply before January 1st for the necessary space for the same in the British section.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—WILLIAM MOORE, M.D.

Secretary—E. H. BENNETT, M.D.

Osteitis of Head of Femur.—DR. BARTON said: This bone consists of the head, neck, and upper part of the tuberosity of the right femur of a little boy, aged eight years, who was admitted, under my care, into the Adelaide Hospital six weeks ago. He was then suffering from symptoms of morbus coxæ, accompanied with signs of suppuration. An abscess was in existence, pointing a little below the trochanter. He was placed in bed, and perfect rest obtained by means of a weight, but the symptoms did not improve. The abscess came forward, and was allowed to come near the surface before it was opened. When opened, it discharged a considerable quantity of whey-like pus. The appearance of the boy suggested a strumous diathesis, as he had red hair and a fine skin. He could give no history of an accident beyond falls such as all children frequently get, nor could his friends point to any special cause of the disease. Shortly after the abscess was opened the trochanter became more prominent, and the limb became inverted and somewhat shortened. The shortening was apparently considerable, but slight on measurement, and it had all the look of a dislocation. As his constitutional symptoms were increasing in severity, and the limb by no means improving, I performed the operation of excision on last Wednesday week. On making a semilunar incision, the knife came upon the head of the bone much more readily than is usual while the bone is in its place. I found the capsular ligament in a great degree removed, but was surprised, when the head of the bone turned out of the wound, to find that there were no ulcerations of the cartilage, and I felt with my finger that the acetabulum also was in a sound condition, as far as the surface of the cartilage went. So far from being reduced in size, the head of the bone was decidedly enlarged. On making a section of the bone after it was removed, we perceive that the cartilage, though quite safe on the surface, was loosely attached to the bone, and that the bone itself was the seat of inflammation—in fact, that there was extensive osteitis of the cancellous structure of the head and neck of the bone. I do not enter into the results of the operation further than to state that it is ten days since it was performed, and the patient's temperature is now normal, his other symptoms and appetite good, the limb lies straight, and there is a copious and healthy discharge from the wound. The case promises

to be a successful one, but I cannot say more at present. It is seldom, in fact, that we have an opportunity of examining the bone in this stage of the disease. The specimen is interesting as presenting the unusual condition of inflammation of the bone without any apparent inflammation in the cartilage.—*November 29, 1879.*

Extensive Rupture of Liver and one Kidney, followed by attempts at repair, showing the possibility of recovery in such a case.—DR. W. THORNLEY STOKER said: These specimens of a ruptured liver and kidney were taken from the body of a labourer, aged twenty-nine years, of stout, vigorous build, and healthy appearance, who was admitted into the Richmond Hospital on Thursday, the 20th of November, at three o'clock in the afternoon, with the following history of injury:—Three hours before he had been crushed between the buffers of two railway waggons, one striking him in front of the epigastric, umbilical, and right hypochondriac and lumbar regions, the impact of the other being at corresponding points posteriorly. He suffered great pain, but did not lose consciousness, and was able to extricate himself and walk down the street to a public-house, where he drank a glass of whisky. He then got up on a car, and was driven to the hospital.

On admission he was suffering from a partial collapse. His face was pale, pulse 116, temperature normal, and he complained of great pain over the region of the liver, aggravated by manipulation and by the acts of respiration. He could, however, walk well. Inspection detected no sign of the injury he had received, except some slight bruising over the hepatic region. A catheter was passed, and about half a pint of clear urine, free from blood, was drawn off. In about half an hour he commenced to retch violently, but vomited nothing. Percussion did not give any evidence of intra-peritoneal bleeding. He was put to bed, proper measures were employed, and towards evening he passed into a reactionary stage, his temperature being normal, and his pulse sinking to 100.

The patient was considered to have sustained a laceration of his liver; the symptoms pointed to an injury of no other organ, and as soon as food was introduced into the stomach it was ejected, which showed that the absence of vomiting at first was due to the emptiness of the organ, and not to its having been torn. There was no blood in the urine at any time, no pain in the thigh, ureter, or testicle, and no retraction of the latter organ.

During the four following days the man appeared to be doing as well as could be expected. He suffered varying degrees of pain, but seldom of a very intense character. It was chiefly confined to the region of the liver, and occurred at times in the right shoulder. Its character as well as its situation pointed to its being due to hepatic inflammation. Tenderness existed over the liver, and to a slight degree over the epigastrium

There was evidently little or no peritonitis. He continued to vomit very frequently, the act being always excited by ingestion. On the 23rd—three days after his admission—the belly became tympanitic, and his face and conjunctivæ were slightly jaundiced. His bowels acted regularly, and without assistance. On the morning of the following day I saw him, and while considering his state less favourable than before, both the tympany and jaundice having increased, I did not by any means dread the rapidly fatal result which followed. A few hours after my morning visit the house surgeon, Mr. Lentaigue, was called to see him, and found him in a dying condition. He had suddenly, and while lying quite still, become worse; his respirations were fluttering, and 40 per minute, his pulse 160, and he was suffering from an intense accession of abdominal pain. He grew rapidly worse, in spite of all attempts to rally him, and died at three o'clock p.m., just four days subsequent to his admission.

His range of temperature was peculiar—on the day of his accident varying from 98° to 98.6° , on the following day it went up to 99.8° , on the third day to 104.4° , on the day preceding his death it fell to 102° , and on the last morning of his life to 98.5° . His respirations generally varied from 22 to 26.

His treatment was a usual one—he was kept at rest, his abdomen poulticed, his food carefully selected, and given in small quantities; and opium and calomel administered—the former drug freely.

A *post mortem* examination was made twenty-one hours after death, with the following results:—The body was well nourished, and the abdomen covered with a thick layer of superficial fat. Its walls were uninjured save the slight bruising already spoken of. It was enormously distended, and when opened was found to contain a large quantity of blood—some old, but most of it recently extravasated—and some bile. The transverse colon was adherent to the under-surface of the liver, and the liver itself at one or two spots adhered to the diaphragm. There was no general peritonitis—in fact, none except the adhesive inflammation at the points named. The peritoneum was stained yellow by the bile. The intestines were greatly distended by gas. The bleeding had occurred into both the lesser and greater peritoneal cavities. The left kidney, the spleen, stomach, gall-bladder, and the intestines were uninjured. The right kidney and the liver had sustained extensive lacerations, and on the back of the former of these organs a little blood was extravasated. The heart was healthy, and both it and the inferior vena cava were quite empty of blood; the lungs were collapsed and congested posteriorly. The right kidney was extensively torn, the lacerations running across the anterior surface of it transversely, and extending nearly from the inner to the outer margin, and so deep as to go almost to the sinus; the rent did not extend into the sinus, and hence I presume the

absence of blood in the urine, which is a somewhat unusual condition where so extensive a tear of the kidney has occurred. This tear was opened up by the process of manipulation during and after the *post mortem* examination, but at the time it was removed it was completely sealed up, and was in process of healing, its edges being glued together by lymph. This condition may still be seen at its inner extremity. The injury to the liver is most extensive. There is a little transverse tear on the upper surface of the left lobe, and at that point the viscus was adherent to the under-surface of the diaphragm. If all the rents in the right lobe were measured, their added length would be about a foot and a half. One tear, between three and four inches long, crossed the upper surface of the right lobe transversely; behind it is a small one not so deep. The depth of the great tear, as disclosed by an antero-posterior incision, reaches nearly to the under-surface of the organ; and the sides of the tear had become closely adherent to each other, and had united, so that the wound was in process of healing at the time of the man's death. In front is another large, irregular tear, which was also in course of union. It extends first transversely, then downwards and forwards, then directly forwards to the edge of the liver, where it is joined by another large rent which extends across the right corner of the organ. The latter rent, three or four inches in length, goes through the whole thickness of the liver; so that the man, during his passage to the hospital, must have had a large portion of his liver hanging like a rag from the rest of the viscus.

The cause of his sudden and unexpected death was now evident. A large secondary hæmorrhage had occurred into the peritoneal sac during the hour or two prior to his dissolution. We were unable to determine the point from whence this hæmorrhage proceeded, but presumed that it was from one of the lacerations on the under-surface of the liver, which had become to some slight extent opened, and from which the unfortunate man had bled to death.

There are some points of great interest in the case—one is the astonishing power of endurance which enabled the man, when he had sustained such a terrible injury, to walk to a public-house, partake there of the national restorative, and then get up on the outside car which conveyed him to hospital—a means of conveyance which must have subjected him to great uneasiness. The next matter worthy of attention is that an extensive laceration of the kidney could be present and not have given rise to the usual symptoms pointing to renal disaster; for there was no numbness of the upper part of the thigh, no blood-clots of any sort in the urine, no pain shooting along the ureters, and no retraction or pain in the testicle. Again, it is interesting to see what extensive lacerations of the liver may occur without giving rise at once to fatal hæmorrhage. It is of great importance to know that tears so extensive might possibly

have progressed to a favourable termination, for I think we may regard the cause of the man's death as, to a large extent, accidental, and owing to a condition that might not have taken place. The hæmorrhage being a thing that he might have been spared, and putting aside the occurrence of which, recovery seemed, from all that the *post mortem* disclosed, to have been possible, as the extensive rents in both kidney and liver were united, and were all in process of being healed. Another noticeable point was the comparative absence of peritonitis. A good deal of bleeding must have occurred into the peritoneum, and even some bile must have escaped into it from the torn ducts at the time of the accident, and yet there was no peritonitis except a small amount of adhesive inflammation in the immediate neighbourhood of the injury. One lesson which the case impresses is the necessity of maintaining a condition of absolute rest in cases of injuries to the abdominal viscera, even though at first sight they may appear to be of the most trivial character.—*November 29, 1879.*

Thoracic Aneurism.—DR. FINNY said: This case of aneurism of the arch of the aorta presents some points of interest. The following notes of it were taken by Mr. Fred. Robinson, one of my clinical pupils at the City of Dublin Hospital:—The patient was a labourer, aged thirty-six years. He was of temperate habits, never having been intoxicated but once in his life, and being in the habit of drinking beer rather than spirits. Three years ago he first felt a darting pain in the right side of the chest, close to the sternum, but, as it did not inconvenience him much, he did not give it much attention. Ever since, however, he has not been strong or healthy. Up to June, 1878, he was able to continue at his work, but then the pain became so severe that he was obliged to give up working. He could give no account of the cause of the pain. He had never, to his knowledge, strained himself, and had never suffered from rheumatism, and the only accident he had was about nineteen years ago, when he got a fall from a height and fractured his right thigh-bone. In June, 1878, he was admitted into Sir Patrick Dun's Hospital. After remaining there six weeks he left it, feeling himself nothing better. During that time he complained of great weakness, difficulty of walking, and pain in his chest, which became more frequent and caused him sleeplessness. He remained at home doing but little work, and then attended the extern department of the City of Dublin Hospital during last summer and autumn. His chief complaint was paroxysms of agonising pain, which attacked him at night and which were so severe that he had to scream.

Believing the pain to be neurotic I employed nerve sedatives, including the inhalation of nitrite of amyl, and found that the latter gave relief. The relief, however, was but temporary. He got worse, and placed himself under my care on the 10th of November last. Shortly afterwards the

pains in his chest became less, he spent better nights, and had no screaming fits; however, he then began to suffer from paroxysms of coughing. The cough was accompanied by no stridor or laryngeal sounds, and, in fact, sounded like the cough of bronchitis. A careful examination of his chest failed to detect any râles or other symptom to account for such a cough—the breathing being normal, but louder on the left side, with, at times, an interrupted inspiration. When the cough came on he gasped for breath and threw himself forward. It was plainly a cough due to nerve-irritation. Physical examination detected a decided enlargement of the heart, the apex of which beat three finger-breadths to the left of the nipple, at the seventh rib. There was also an area of dulness corresponding to the whole length of the sternum up to the *fourchette*, and of its breadth. There was a double murmur heard at the apex, but the second sound could be heard through the murmur; the first was dulled, prolonged, and accompanied by a murmur. At the base these murmurs were much more distinct, and were both systolic and diastolic in time. The site of the maximal intensity was the region of the sternum between the second intercostal rib and the space on the right side. A double murmur, but seemingly at a distance, was audible behind between the spine and right scapula. During the moment of deepest expiration a slight impulse, systolic in time, could be felt at the second right intercostal space, by placing the hand flat on the chest. His pulse was 92, collapsing in its nature, but regular, and before admission to hospital the radial pulse was notably delayed. On the 20th his cough became more troublesome, and was accompanied with expectoration. He also complained of pain—referable to the right side of the sternum and down to the costal arch—its chief seat being over the fifth and sixth ribs. Leeches were applied over the sternum to relieve the pain. This leeching gave great relief, and, so far, aided the diagnosis of aneurism. In two days afterwards he suffered greatly at night; his cough became very violent, and was on several occasions accompanied with vomiting.

On the morning of the 22nd he seemed restless, but by no means looked like a man who was near his death. He was examined carefully by myself and some of the class. His pulse was much quicker than before, being 120, but there was no other change in his condition or symptoms. About half-past three o'clock he showed signs of fatal syncope. The resident, Mr. Davis, on coming into the ward, found him sitting up in bed, to all appearance dead. He laid him down on his bed, and instantly his respiration, which had been suspended, came on again. This occurred two or three times between that hour and half-past five o'clock, on each occasion his respiration seeming to be suspended, while his heart beat with great force, although there was no pulse at the wrist. On one of these occasions respiration was resumed by Mr. Davis forcibly compressing the thorax by his hands. His death took place at 6 30.

A *post mortem* was made thirty-six hours afterwards. The result of a physical examination of his chest made before it was opened corresponded closely with the appearances before you. The heart is enormously enlarged, which was due entirely to the increase in size of the wall and of the cavity of the left ventricle, which was excentrically hypertrophied. The right ventricle was not unusually hypertrophied. The anterior surface of the heart had some thickening of the pericardium; while the upper portions of it, reflected from the diseased aorta, showed evidences of moderately recent inflammatory action—a possible cause for the pain. There was also some slight adhesion between the right auricular appendix and the aorta. The aorta was in a state of great dilatation, which bulged forward, and to the right side, and which extended close up to the origin of the three great vessels; but none of those vessels were engaged in the enlargement. On opening the aorta there appeared a well-marked example of the scabrous condition of the vessel—its elasticity was gone, and it was greatly distended, chiefly at the right side. The inflammatory process was limited to the ascending and the transverse portions of the arch. The valves, when examined from a ventricular aspect, seemed to be totally incompetent, but on pouring water with some force into the aorta, the valves closed, and allowed but a little trickling of water, and by no means the rapid regurgitation which one would have expected; and yet, from the great dilatation and hypertrophy of the ventricle, we cannot but acknowledge the existence of prolonged regurgitation during life. This is a point of interest, as it is known that Dr. Stokes did not consider the connexion between aortic valvular disease and aneurism at all a common connexion. Others speak of it as a very frequent connexion. The disease of the artery and valves may begin either in the valves, and extend along the wall of the artery, or—as I consider the order in this case—in the aorta, and extend backwards and downwards to the valves. One valve seems healthy; the other two are thickened—a condition which fully accounts for the systolic murmur. On tracing the coronary vessels the left is readily seen, but I cannot find that the right has any opening into the aorta, though a probe was passed backwards along its course. The case is of interest as exemplifying the coexistence of aortic regurgitation with aneurism—the aortic regurgitation being more probably due to the dilated condition of the vessels rather than to any great disease of the aortic valves. That the patient died more from aortic regurgitation than from aneurism, is pretty plain, since the mode of his death indicated that it was the result of asystole, and from the sudden falling back of blood into the left ventricle.—
November 29, 1879.

THE DOCTOR
SOCIETY FOR
MEDICAL
PRESERVATION

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1879-80.

President—ROBERT FOSTER DILL, M.D.
Hon. Secretary—WILLIAM WHITLA, M.D.

Tuesday, December 2, 1879.

ROBERT FOSTER DILL, M.D., President in the Chair.

President's Address.

GENTLEMEN,—We have come here to-night for the purpose of inaugurating another session of the Ulster Medical Society, and I gladly avail myself of this, my first, opportunity to offer my sincere thanks to the Council of the Society for having selected and put forward my name, and to the members, who have done me the honour of electing me—shall I say unanimously electing me—President for the ensuing year.

Then, to be thus called upon by my brethren to fill the presidential chair is, I assure you, to me a source of much gratification and—shall I add—justifiable pride. For when, in the course of a long professional life, after many years spent in very active public and private work, still filling different important appointments, one finds the good opinion of his brethren undiminished, and their voices raised to place him in this elevated position among them, he would be either less or more than human if he did not feel pride in accepting this distinguished mark of approval at their hands.

I have had the honour of being a member of this Society for many years, and longer than many here could remember; and if I did not assist at the birth, I certainly did take part in the operation for its resuscitation. I have watched with interest its development, and I have witnessed its fortunes under many circumstances and at different conjunctures, and I cannot conceal from myself that I never met my friends, the members of the Ulster Medical Society, under circumstances more difficult, more embarrassing, or more trying, than I do on the present occasion.

There may have been a time when I might have been induced to accept of this office with less reluctance—indeed I shall say with more readiness than I do now—but that may have been because I was not

then so keenly alive to, or sensible of, the great responsibilities with which it is associated as I am at present.

But why need I dwell on such matters, as formerly no one thought of me for the appointment but *myself*, whilst latterly every one thought of me for it but myself. And if this be so, then I can with the more confidence cast myself implicitly upon the kind indulgence of the members, knowing that they will be disposed to throw their friendly mantle over the many deficiencies and numerous shortcomings which must appear with me, from time to time, during my period of office. Indeed at my time of life I should have been seeking rest, in place of taking upon me more work. But loyalty to my profession and respect for friends forbid the idea of rest, or of not obeying their call.

And now, gentlemen, when I look back over the years that have passed between the period I entered the Society and the present, I can—shall I say it—unfortunately see as much to excite feelings of sadness as I can of an opposite character. But why should we look for an exception here of an unalloyed pleasure when we so often see that—

“Even mirth is gilded with sadness!”

Time—inexorable Time—has been busy, sending his swift shafts and plying his sharp and fatal scythe among the members; and I have seen one and another and another cut down, and fall before the fell destroyer. M'Donnell, Thompson, Saunders, Malcolm, Reade, Stephenson, Stewart, Burdon, Johnston, besides many other distinguished members I could name, have died since I joined this Society.—No; they still live, and are enthroned in many hearts—they are embalmed in many a memory! But when I look up and around upon this numerous meeting, and when I see these well-recruited ranks again filled by men who have already proved themselves possessed of so much intelligence, ability, and discipline for their work, and when I hear of such favourable accounts from your able and unwearying secretary, Dr. Whitla, as well as when I am told of the very satisfactory results arising from the indefatigable exertions of your worthy treasurer, Dr. Esler, I think I am more than justified in giving expression to the opinion that there is much ground for encouragement, much to inspire confidence, and enough to bespeak a prosperous future for this much-esteemed and very useful Society.

And although, as we have seen, one generation cometh and another generation goeth, yet methinks I hear the whispered sentiment, as it floats upon the breeze—

“All men think all men mortal but themselves.”

“But men may come and men may go,
But I stay on for ever.”

And now, gentlemen, at the risk of wearying your patience, I venture to occupy your attention a little longer with a few observations regarding

the nature, the qualifications, and the responsibilities of the medical profession. I hold what I feel persuaded no one, at least here, will deny—viz., that to perform the important functions of the medical profession a medical man must be possessed of a higher and more varied order of talents, as well as of more extensive learning and acquirements, than are considered necessary for the other professions.

Take, for instance, *divinity*, *law*, and *physic*, which are always spoken of as the three learned professions, and of these there is not one that requires a knowledge of such a wide range of scientific subjects as is demanded by medicine, surgery, and obstetrics.

The student of theology, although admittedly occupied with the highest subject that can engage the attention of man, still is occupied with but a single subject; and law presents to its votaries little or no variety or interest, occupied as they are with the perusal of old, dusty, musty parchments, made venerable, if not by years, by the depth of dust which gives them *weight*, and almost seals them to their shelves. And so “law is law.”

But what shall I say for medicine. The number of sciences required here are all but endless, and the grandeur of the object which the physician has set before him when he enters on his work is indeed unbounded.

He must be intimately acquainted with the body as one great and wonderful machine—with its two hundred and fifty bones; with its four hundred and sixty muscles; with its myriads of vessels and nerves, which are quite beyond my arithmetical powers for calculation; with its heart-pump constantly sending the vital fluid through ten thousand channels, at the rate of more than one hundred thousand strokes a day, for seventy years or more. He must also be acquainted with the way in which these materials are prepared, with the manner in which they find their way into the system, with the mode in which they are purified, and, when they become effete or worn out, with the way in which they are eliminated and again renewed. He must, then, be acquainted with the brain and nervous system, from and by which every part is supplied, and out of which supply come sensation and motion—and, at the same time, do not these threads of nerves convey from head to hand the telegraphic commands of the *will*?

When this magnificent machine is in active operation we can easily see and recognise results, but we cannot comprehend that most wonderful and mysterious association which exists between it and what is called life, or that still more mysterious association which is found to exist between *mind* and matter.

In this wonderful structure or contrivance we discover a furnace, combustion, a chemical laboratory, a galvanic battery, a force-pump; and all mechanical appliances and powers may be found at work in this one system, and which would require more than a knowledge of anatomy to give one even the most superficial, the faintest, idea or insight into

its workings. To a knowledge of anatomy we must add physiology, histology, pathology, and chemistry. When this great work is completed we must then enter upon a new series of sciences—viz., materia medica, botany, zoology, medicine, surgery, obstetrics, and other collateral sciences. And, after all, we are but on the threshold, the border-land, of the field which must be occupied and cultivated by the high-bred, educated, and *practical* physician.

It were unnecessary before this Society to urge the matter further, or, in establishing my position, to go more minutely into detail; but as students are admitted (and very properly) to our meetings, and as they are to fill our places hereafter and when we are gone, I trust to the kind consideration of the members if, for their sakes, I am drifting into other lines than those which should be kept in an address to a learned Society. Will you, then, allow me to proceed by endeavouring to prove that there are other qualities required by the medical man besides the sciences and the learning of which we have been speaking. By the late Dr. Stokes it was considered necessary (and everything this eminent Dublin physician uttered should be remembered) that the youth when entering upon his professional studies should, in the first place, have a medically constituted mind, or he should exhibit an aptitude for medicine, or, as I believe he termed it, be in possession of the "*mens medica*," before he could expect to attain to any degree of distinction, or even the smallest amount of success in the profession. Indeed, he considered this as a *sine quâ non* for success. Under all the circumstances I would be disposed to say that the case stands thus:—The physician must first have an aptitude for medicine, he must next have a knowledge of the sciences, he must also have not only a large and overflowing measure of the *suaviter in modo*, but he must have, in addition, a proportionate amount of the *fortiter in re*. These qualities harmoniously blended are sure to lead to fortune. Without them the physician must soon discover, before he has travelled far on his journey, that "there is a lion in his path."

That much may be done by training, culture, or by art and education, to overcome natural deficiencies or obstacles to professional success, no one will deny; but that there are marked predispositions in individuals to certain pursuits, which it is always well to seize hold of and cultivate, is a proposition which, I think, most persons must accept. There are one or two very appropriate stories which, although you may have heard before, I think may be happily used here to illustrate the point under consideration. Human life has been compared to a broad table pierced with numerous holes, each of which has a pin made exactly to fit it, but which pins, if stuck into these holes in haste, at random, or without selection, must lead to very awkward errors, and, sometimes, disastrous consequences. And in the same way we may speak of men. If the round man be taken and forced into the three-cornered hole, and the

many-sided or square man be driven into the round hole, the misfits must lead to serious blunders and most grievous mistakes. The other is that one which has been recorded of Cecco d'Asceli and of Danté, while discussing the subject of natural and acquired genius, and which I shall here advance to further illustrate the matter in hand. Cecco d'Asceli held that nature was more powerful than art, while Danté asserted the contrary. To prove this principle, Danté, the great Italian bard, introduced his cat, which by practice he had taught to hold a candle in its paw while he supped, or sung, or read. Cecco d'Asceli, who before this had expressed a desire to witness the experiment, came prepared for the occasion. While Danté's cat was performing its part, Cecco suddenly lifted the lid of a pot which he had cunningly filled with mice. The creature of art instantly showed the weakness of a talent which had been purely acquired, and, dropping the candle, flew on the mice with its instinctive propensity. Danté was himself much disappointed, and was obliged to admit that nature and the natural gifts or faculties were more to be depended upon or trusted than art. I could, if it were necessary, give other facts by way of illustration, but I think I have said enough to prove the necessity for—first, the natural gifts and dispositions of the mind should be bent on an object, and, second, that when these faculties are properly cultivated that object is more easily reached. To my mind there is no profession more imperiously demands a predisposition than medicine, and this, combined with culture and natural courage, must as a consequence, as I have already sketched, lead to fortune. Moreover, if, in addition to all these great and necessary qualities, the physician be possessed of that identification—that sympathy of feeling with his patient's interests—he must command a confidence, and wake up a responsive echo in the soul which no material means can ever accomplish or make attractive. How could it be otherwise, for what has been spoken of is natural genius—it is a heaven-born gift which, while it may be fostered and cultivated, can never be communicated? This sympathy and identification of feeling would seem to possess a power and penetrate into regions where art, or that cold and icy philosophy of the age, are quite inaccessible.

I would, then, respectfully but confidently submit, that if this complicated machine—this wonderful mechanism—is to be preserved, this remarkable casket, containing as it does such a precious jewel, is to be renewed, I should rather think it would be safer in the hands of him who can with perfect knowledge, disposition, and culture correctly estimate the value of the treasure, than be placed in his hands who is imbued with the chilling philosophy of the times, and who in the end would consign the whole to the maelstrom-whirlpool of destruction, or, as a modern scientist expresses it, “in the end but melts away into the infinite azure of the past.”

But I have to congratulate the Society that its members have no sympathy with such doctrines and sentiments as these. On the contrary, does it not belong to our profession as a privilege humbly to follow in the footsteps of Him whom we can call our common Master—who, clothed in human form, went about doing good, and delighted in relieving suffering humanity. Like Him, and influenced by such an example, it is our peculiar mission to heal the sick, to give sight to the blind, to make the deaf to hear, and the lame to walk; and from a bed of pain, of suffering, and of anguish, to raise up a first-born, and thereby to make a mother's heart to sing for joy.

Allow me further to say, that we are not like those persons in the other professions who use the press, the platform, and occasionally even the pulpit, for their individual aggrandisement and professional promotion or advancement.

Neither is it ever found that the members of the medical profession parade or exhibit themselves before the public as others appear, robed in scarlet and ermine, with mace-bearers and trumpeters before them, and crying "They come! they come!" It has always been the business of this Society and its members to do their work privately and unostentatiously; and whether we be engaged in our common work here or are found in the halls and the chambers of the great and the rich, or in the houses and the garrets of the poor, we are invariably to be found pursuing our professional calling, and making it pre-eminently *PRIVATE practice*.

In this way we are obliged to throw ourselves, our reputations, and all our professional interests into the hands of those who have no knowledge of what we are engaged in, and no sympathies with us in the difficulties with which we are contending both by night and by day; and how often do we hear our good name and our best intentions assailed and libelled, and that even at the very time when we are engaged on behalf of the dearest interests of our gratuitous and uncharitable defamer, and this without redress. But he that "steals my purse steals trash, but he that filches from me my good name robs me of that which not enriches him, but makes me poor indeed."

Such being the case, we should be oftener found exercising more of the *esprit de corps* than is found occasionally to exist among us, seeing that we have but one common aim or object—the advancement of science, curing disease, and combating death.

But, after all, there is nothing in life "so well becomes a man as a mild demeanour and manly courage," springing from scholarly attainments and the *mens conscia recti* which must necessarily follow, and before which the walls of opposition must fall and the citadel be taken possession of. On the contrary, is not that miserable selfishness to be despised which prevents a man coming out and taking part in profes-

sional work, except when self-interest is the moving power. And when difficulties of any kind may arise, it is a pity to see the *small man* pursued before the wind and seeking shelter in his own retirement; to call this success and happiness is a burlesque upon the terms. I should rather take example from a higher, nobler, braver spirit, which, with fixed purpose and determined will, breasts the storm, and, if needs be, mounts the hurricane; and as we follow him in his onward and his upward progress, we see him rising higher and higher, until at last he enters into that purer, calmer, clearer light above.

“He lives too low who lives beneath the sky.”

When I commenced to prepare this address I thought it would be my duty to bring before the notice of the Society some of the great achievements, progress, and improvements which have been attained within the last thirty or forty years in my own departments of medicine—viz., Midwifery and Gynæcology. But when I considered that I was to address a Society the members of which are practising in all the departments of medicine, I did not believe that this would be acceptable. Then I thought of reviewing the field of general medicine and the progress we had made in it during the same period; but I felt that the short time I had at my command was not equal to the task, and so I have fallen between these two great subjects, without satisfying myself, and feeling conscious that I have not satisfied my audience. I have, however, made an attempt, by throwing together a few crude and hurriedly-expressed thoughts, to prove that medicine occupies a very high (if not the highest) place among the learned professions. I might have easily done more had time permitted, as it is quite capable of proof that numbers of the medical profession occupy the very foremost ranks in advancing and sustaining the most important, because the most practical sciences, and that we accomplish more good work, in all countries and at all times, by ameliorating and improving man's condition, than is done by all others besides. And, finally, I think I may here claim for you what the public must eventually concede, to use the words of an able and accomplished thinker, that—

“We live in deeds—not years; in thoughts—not breaths;
In feeling—not in figures on a dial;
We should count time by heart-throbs. He most lives
Who thinks most, feels the noblest, acts the best;
Life's but a means unto an end—that end
Beginning, mean, and end in all things—God.”

THE DOCTOR SOCIETY FOR MEDICAL OBSERVATION

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday
November 29, 1879.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	641	783	21	12	57	7	7	29	17	32·4
Belfast, -	182,082	484	380	—	9	2	2	12	13	11	27·3
Cork, -	91,965	185	226	—	11	36	1	—	11	6	32·0
Limerick, -	44,209	101	78	—	—	4	—	—	—	2	23·0
Derry, -	30,884	71	44	—	—	2	1	—	—	1	18·5
Waterford, -	30,626	57	59	—	—	—	—	—	—	4	25·3
Galway, -	19,692	33	36	—	—	—	—	—	—	—	23·5
Sligo, -	17,285	23	33	—	—	—	—	—	1	4	24·8

Remarks.

A rise in the mortality of all the towns is noticeable, coincidently with the approach of winter. The death-rate was extremely high in Dublin and Cork; very high in Belfast; high in Sligo, Galway, and Limerick; low in Derry. In London it was 24·2 per 1,000 of the population annually; in Edinburgh, 18·1; in Glasgow, 19·2; in the Dublin registration district (omitting the deaths of persons admitted into public institutions from outside the district), 31·8; and within the municipal boundary of Dublin, 34·6 per 1,000. In connexion with the comparatively high mortality in London, it is to be remarked that excessively cold weather was felt in the metropolis during the four weeks. The mean temperature at Greenwich was only 38·5°, whereas in Dublin it was 43·9°, or more than 5° higher. In Dublin zymotic diseases were credited with 176 deaths, compared with an average of 137·4 in the previous ten years. Smallpox and measles were somewhat less fatal than in the preceding four weeks. Scarlatina and fever showed a much greater fatality than before. Among the 29 deaths from fever, 5 were ascribed to typhus, 20 to enteric, and 4 to continued fever of undeter-

mined type. The epidemic of scarlatina in Cork has become very serious; the number of deaths (36) was exactly double that registered in the previous four weeks (18). On November 29 the number of smallpox patients under treatment in the Dublin hospitals was 73, compared with 88, 69, 55, and 40 at the close of the preceding periods of four weeks. The advancing season was marked by an increase in the fatal cases of diseases of the respiratory organs. The total deaths from these affections in Dublin were 180, compared with a ten years' average of 132·0, and included 130 from bronchitis (average=97·6) and 31 from pneumonia (average=19·1).

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of November, 1879.

Mean Height of Barometer,	-	-	-	30·304 inches.
Maximal Height of Barometer (on 7th at 9 a.m.),	-	-	-	30·683 „
Minimal Height of Barometer (on 11th at 6 p.m.),	-	-	-	29·860 „
Mean Dry-bulb Temperature,	-	-	-	43·4°
Mean Wet-bulb Temperature,	-	-	-	41·2°
Mean Dew-point Temperature,	-	-	-	38·4°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·234 inch.
Mean Humidity,	-	-	-	83·0 per cent.
Highest Temperature in Shade (on 18th),	-	-	-	55·3°
Lowest Temperature in Shade (on 30th),	-	-	-	30·3°
Lowest Temperature on Grass (Radiation) (on 30th),	-	-	-	27·0°
Mean Amount of Cloud,	-	-	-	65·0 per cent.
Rainfall (on 10 days),	-	-	-	1·251 inches.
General Direction of Wind,	-	-	-	N.W. & E.N.E.

Remarks.

The leading characters of this month were—(1) a remarkably high mean atmospherical pressure, (2) an average mean temperature, (3) a rainfall but little more than half the average of that for November in the preceding fourteen years, and distributed over 10 days, compared with an average of 16·5 rainy days in this month, and (4) a marked preponderance of winds from polar points of the compass. The mean temperature in Dublin was exactly 6° above that of the exceptionally cold November of 1878. Remarkably tranquil, fair, although cloudy, weather prevailed in Ireland throughout the first week of the month. The barometer was unusually high, as the centre of a large anticyclone lay over this country until the 8th. Then came a brief spell of unsettled, changeable weather, as two bourrasques passed over the British Isles from W.N.W to E.S.E. On the 12th the anticyclonic conditions which have produced so fine an autumn became re-established, and some calm,

generally fine days followed. At this time keen frost was felt in England, the shade thermometer falling to 17° at the inland stations on the night of the 14th. In striking contrast to such low temperature is the fact that on the night of the 17th the shade thermometer did not fall below 52.4° in Dublin. On Wednesday, the 19th, a complete change occurred, for a brisk rise of the barometer in the north and a fall over France reversed the previously existing conditions of wind and weather. A fog on this day gave place to strong easterly winds and cold showery weather, which lasted almost to the end of the month. Sharp frost set in on the night of the 29th, and some light snow-showers fell in Dublin on the afternoon of the 30th. Hail fell on six days—viz., the 11th, 20th, 21st, 25th, 26th, and 27th. Snow or sleet fell on the 26th and 30th. The atmosphere was foggy on the 3rd, 4th, 8th, 9th, 13th, 14th, 15th, and 19th. A solar halo was seen on the 13th, and lunar coronæ on the night of the 28th. The intensity of the cold over the S.E. of England and N.E. of France during the latter half of the month deserves to be noticed. In Surrey at one time the snow lay fifteen inches deep on the level, and even in the London parks there were three inches of snow about the 21st.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

POISONING BY ANILINE.

THREE cases of poisoning have occurred in the wards of the Hôpital Saint Louis, Paris, in consequence of the application of a solution containing five grammes of the hydrochlorate of aniline to patches of psoriasis. The symptoms produced in the patients treated in this manner were choleraic in character, and set in about an hour and a half after the application to the affected portions of the skin of compresses steeped in the aniline solution. They were as follows:—Nausea, chills, cyanosis, cramps, dyspnœa, somnolence, and, in one case, coma. There was pronounced dysuria, and the urine contained fuschine. In consequence of these clinical observations, M. Leloir has studied, experimentally, poisoning by aniline. He communicated his results to the Société de Biologie, and they are published in full in the *Gaz. Méd. de Paris* (No. 47), and in abstract in the *Gaz. Hebdom.* (No. 46). In dogs, into whose veins he injected a solution of aniline, analogous symptoms were observed. The urine was scanty and contained fuschine [chloride of rosaniline, Ed.]; the saliva, on the other hand, flowed freely, but did not contain either fuschine or aniline. The poison seems to act primarily on the blood.

It always presented a brown, tarry, or sepia colour, and had a strong smell of aniline, but its red globules appeared histologically healthy. Nevertheless certain alterations of the blood appear to be the cause of the symptoms observed. In several cases there were epileptiform convulsions, which, however, did not occur if the animal was killed by a series of weak injections. M. Quinquaud observed, with reference to M. Leloir's communication, that he had made analogous experiments in 1873, and that the mechanism of all these disorders consists essentially in an alteration of the hæmoglobin, which absorbs oxygen with much difficulty, and in certain lesions of the constituents of the plasma. M. Laborde made the interesting remark that workmen in aniline manufactories are subject to epileptiform convulsions. [In noticing the above symptoms, the occurrence of arsenical poisoning, in connexion with the use of aniline pigments, may be borne in mind.—ED., PERISCOPE.]

NARCOTIC ACTION OF IODOFORM.

DR. OBERLANDER reports two cases which confirm the experiments of Binz on the narcotic action of iodoform. A syphilitic woman had taken twenty-four grammes of the drug, in pills of one centigramme, in the space of eighty days. All at once she was seized with weakness, vertigo, and diplopia. After two days she fell into a profound sleep, which was followed, after thirty-six hours, by nervous exaltation, with severe cephalalgia, delirium, and disordered speech. These phenomena were followed by a period of weakness, during which the patient staggered when walking, and even when standing; then the cephalalgia, vertigo, and diplopia reappeared. All this lasted for two weeks. In the second case the phenomena appeared much earlier. The syphilitic woman was sixty-nine years of age, and presented symptoms of poisoning seven days after commencing the internal use of iodoform, and after having taken about five grammes. The sleep continued for five days, and was followed by a sensation of debility and vertigo, which continued for several weeks.—*Zeit. f. prakt. Med.* and *N. Y. Med. Jour.*

MICROSCOPIC EXAMINATION OF THE CIRCULATION.

UNDER the name of *cheilo-angioscopy*, Professor Hueter announces a new method of studying the circulation in the mucous membrane of the inner surface of the human lower lip. Having secured the head after the manner of photographers, and fixed the chin with an analogous arrangement, he adapts a microscope and a system of illumination. The lip is held by small forceps. On examining the lip a magnificent reticulum of the ramifications of the arterial and venous capillaries is seen, as if the vessels had been injected with a red mass. On looking closely at a small superficial vessel, however, and with a good illumination, the blood-globules are seen moving in the form of small points. The white globules

are said to appear as small white spots. This new method may serve to clear up many physiological and pathological problems. Professor Hueter has already obtained important results, which he promises to publish shortly.—*Centralbl. f. d. med. Wissenschaft* and *N. Y. Med. Jour.*

POISONING BY CHLORATE OF POTASH.

A HEALTHY, robust girl, aged two years and eight months, gained access to a bottle of chlorate of potassium, and ate about three drachms of the crystals. As she had partaken of food a short time previously, and drank largely of water immediately afterwards, no symptoms of poisoning showed themselves for two hours, except that she complained of a pain in her stomach about half an hour afterward. She then vomited very freely, ejecting from her stomach the food and water that she had taken. She passed from her bowels at the same time a large quantity of greenish mucus, followed by a clear mucus. After this she became much prostrated, with a feeble pulse and a bluish, ashen hue of countenance. Under the use of alcoholic stimulants the prostration passed off temporarily. She played about boisterously for a couple of hours, and then slept for the same period. However, the vomiting returned; she became again prostrated, and died in a state of collapse fifteen hours after taking the drug. She complained but once of pain in the stomach and bowels, although frequently asked. There was excited action of the heart, but no suppression or abnormal appearance of the urinary secretion. The case is reported by Dr. Boude in the *N. Y. Med. Record* of Nov. 8. No mention is made of any *post mortem* examination.

BULLOUS ERUPTION FROM IODIDE OF POTASSIUM.

PROFESSOR HYDE, of Chicago, read a paper (*Archives of Dermatology*, October, 1879) upon this subject at the recent meeting of the American Dermatological Association, in which he gave not only the clinical history of a case observed by himself, but also a tabular comparison of the most marked features in all the instances of this rare affection hitherto recorded. His patient was a child eight months old, who, in addition to an eczema of the head, displayed, upon the limbs mostly, numerous vesicles and bullæ, varying in size from a pin-head to a pigeon's egg, and which were somewhat irregular in shape. They showed no disposition to rupture, but were firm and persistent, and contained a semi-gelatinous substance resembling boiled sago. The bullæ were of a dark purplish shade when fully developed, but the smaller ones, which contained a thick serum, were yellow or reddish-yellow in colour. The skin surrounding them was perfectly normal in appearance. The patient had been taking the drug, 0.30 gramme daily, for a month preceding the eruption of the bullæ. They disappeared shortly after the discontinuance of the iodide, as in all the other cases recorded. Dr. Hyde draws from

his study the following practical conclusions:—That in eczema, where a distinctly vesicular or bullous eruption becomes suddenly apparent, the possibility that the iodide has been previously given should be carefully estimated; and that it is quite probable that the rare vesicular and bullous lesions occurring in syphilis may be induced by the same cause.—*Boston Med. and Surg. Jour.*, Dec. 4, 1879.

PSORIASIS AS A DERMATOMYKOSIS.

PROFESSOR LANG, of Innsbruck, publishes in the *Viertelj. für Derm. und Syphilis*, vi. Jahrg., 2 and 3 Heft, a sequel to a former paper of his upon this subject, in which he states that he has discovered the fungus which the natural relations of the disease had convinced him should exist in it. If one removes as far down as possible the scales of the eruption a very thin pellicle is reached, through which the redness of the papillæ is visible. If this be carefully peeled off there are to be seen in it, under the microscope, scattered and grouped, the spores and threads of a fungus, which he proceeds to describe. These, he maintains, have been ordinarily overlooked in such investigations, owing to their delicacy of form and the want of colour of their protoplasm. He regards the fungus as unlike those hitherto observed in the human skin, and proposes for it the name epidermidophyton. He believes that it occurs as frequently in psoriasis as the trichophyton in tinea tonsurans.—*Boston Med. and Surg. Jour.*, Dec. 4, 1879.

BISULPHIDE OF CARBON FOR THE PAINS OF LOCOMOTOR ATAXY.

A CASE of this disease is reported in the *N. Y. Med. Record*, Dec. 6, 1879, in which the bisulphide of carbon applied to the spine gave complete relief from all pain the patient suffered from. A variety of remedies, including the actual cautery, gelsemium, and morphia hypodermically, had been previously used with but very temporary benefit.

CYSTITIS IN THE FEMALE.

TRANSIENT cystitis, dependent upon obscure causes, is treated by Dr. Goodell by rectal suppositories containing one grain each of the aqueous extract of opium and of the extract of belladonna. Hysterical cases generally yield to "massage" and electricity. In obstinate cases Dr. Goodell warmly advocates the dilatation of the urethra throughout its whole extent by the introduction of the forefinger. In the therapeutical treatment of this troublesome disorder atropia is the most efficient remedy, and it may be combined with alkalies or acids, according to the condition of the urine. Injections of a two-grain solution of quinia into the bladder, together with large doses of the same by the mouth, will often improve the condition of the patient. In very bad cases, perhaps the most efficient injection is one of the nitrate of silver, beginning with

weak solutions and increasing their strength daily until twenty grains to the ounce solutions are tolerated. These strong solutions should not be allowed to remain in the bladder longer than ten or fifteen seconds. All malpositions of the womb must, of course, be rectified, especially if they have any bearing on the disease.—*N. Y. Med. Record*, 29th Nov., 1879.

ARMY MEDICAL DEPARTMENT.

THAT the new Army Medical Warrant has already borne fruit is shown by the following list of candidates who were successful for appointments as surgeons in Her Majesty's British Medical Service at the competitive examination held in London on the 8th of December, 1879:—

No.	Names	Marks	No.	Names	Marks
1	F. R. Barker - -	2,590	34	R. D. Donaldson -	1,750
2	A. H. Keogh - -	2,525	35	H. L. E. White -	1,745
3	C. B. Hill - -	2,420	36	C. M. Johnston -	1,740
4	J. R. A. Clark - -	2,330	37	J. L. Hall - -	1,705
5	H. E. B. Flannagan -	2,295	38	A. H. Burlton -	1,700
6	H. J. Michael - -	2,230	39	E. North - -	1,695
7	T. Dorman - -	2,215	40	G. F. Poynder -	1,695
8	A. W. G. Inman - -	2,185	41	J. K. Sherman Bigg -	1,675
9	T. M. Corker - -	2,180	42	G. F. A. Smythe -	1,665
10	E. H. Myles - -	2,145	43	H. L. Battersby -	1,655
11	G. S. Robinson - -	2,125	44	A. Hewitt - -	1,645
12	F. B. Moffitt - -	2,115	45	E. Landon - -	1,640
13	C. A. Webb - -	2,075	46	P. Mulvaney - -	1,635
14	J. G. S. Lewis - -	2,065	47	J. E. Nicholson -	1,635
15	H. Martin - -	2,050	48	T. W. Beale - -	1,625
16	A. E. J. Croly - -	2,010	49	F. E. C. Hood - -	1,625
17	R. O. Cusack - -	2,010	50	W. O. Walsley -	1,610
18	E. F. Smith - -	2,010	51	T. F. M'Neece -	1,605
19	W. A. Cowen - -	2,000	52	R. V. Smith - -	1,500
20	R. H. Forman - -	1,995	53	B. T. M'Creery -	1,580
21	S. J. Flood - -	1,965	54	A. P. O'Connor -	1,575
22	D. S. Williams - -	1,955	55	A. M'M. Bolster -	1,570
23	G. W. Robinson - -	1,940	56	D. Wardrop - -	1,545
24	N. Cameron - -	1,920	57	G. T. Goggin - -	1,520
25	J. Watson - -	1,910	58	H. G. Christian -	1,485
26	O. Todd - -	1,905	59	J. M. Jones - -	1,470
27	A. O. Geoghagan -	1,876	60	F. M. Baker - -	1,465
28	C. R. Egan - -	1,810	61	C. Williamson - -	1,460
29	J. D. Day - -	1,805	62	R. Oliver - -	1,415
30	W. R. Henderson -	1,805	63	A. Asbury - -	1,400
31	R. T. Cumming - -	1,800	64	P. M. Carleton -	1,375
32	A. M. Kavanagh - -	1,795	65	F. R. Maclean - -	1,365
33	J. H. Harwood - -	1,765			

The following gentlemen, having obtained the qualifying number of marks, have also been accepted:—

66. H. L. Cox.
 67. J. P. Carmody.
 68. R. W. Barnes.
 69. T. P. Walsh.

70. G. H. R. Mc. O'Callaghan.
 71. P. H. Fox.
 72. H. A. Wall.

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FEBRUARY 2, 1880.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*Fracture of the Upper Third of the Fibula from Indirect Violence.*^a By E. H. BENNETT, M.D.; Professor of Surgery in the University of Dublin; Surgeon to Sir P. Dun's Hospital, &c.

WRITING in the year 1840, M. Maisonneuve^b reviewed the theories of surgical authors up to that date on the forms and causes of fracture of the fibula. This review includes the examination of the celebrated paper of Dupuytren, and furnishes, in some particulars, corrections of the theory of that great surgeon, while in one notable particular its author breaks new ground. His third group—fractures of the fibula *par diastase*—consists of fractures seated habitually in the superior third of the bone, the result of indirect violence—that is, of a force acting on the foot. Pouteau, half a century before, suggested this seat of fracture of the fibula as *à priori* likely from the weakness of the bone in this place; but attributing its immunity to fracture at this its weakest point to the free mobility of the adjoining tibio-fibular joint, he passes on, as subsequent writers have done, to consider fractures near the ankle, resulting, in his opinion, either from muscular action or from force acting through the foot.

^a Read before the Dublin Biological Club, January 13, 1880.

^b Archives Générales de Médecine. 1840.

82 *Fracture of Upper Third of Fibula from Indirect Violence.*

Vidal,^a writing but a year before Maisonneuve, asserts that fractures of the fibula from indirect injury are always seated in the inferior extremity of the bone—*toujours à l'extrémité inférieure*. The same statement occurs in equally positive language in the most modern authors. As an instance, I may quote Professor Pirrie's words:^b—"Fracture of the fibula in its upper third, while the tibia remains uninjured, can only be the result of direct violence, and the situation of the fracture will be the part to which the violence has been applied." Similarly M. Anger:^c—"Les fractures de la partie supérieure sont, dans tous les cas, le résultat de pressions violents exercées sur le lieu même de la fracture." The only opinions which it is necessary I should refer to with regard to fractures in the position under consideration, before stating my own views, are those which run through the descriptions of writers who avoid the question of cause, such as S. Cooper expresses in his "First Lines:"—"No doubt many of them are never detected at all, in consequence of their being unattended with displacement." Again, in "Holmes' System," Mr. Lane thus writes:—"Although fractures of the middle and upper parts of the fibula are often overlooked and neglected, there is no displacement, and no ill consequences ensue." It is perfectly true that these fractures do not undergo serious displacement, and that, therefore, they unite without requiring any elaborate treatment. The passages I have quoted prove that, although easy of detection, these injuries commonly escape detection. I think this fact is due to the absence of a correct knowledge of their cause—to the idea that direct blows or injuries inflicted on the leg can alone break the fibula in its upper part. Some one will say—What matter, if the fracture mends without deformity? Let any surgeon follow this precept in practice, and having to treat a sprained ankle, as such case will be called, occupy his attention with the ankle and the fibula close by. Let him neglect to examine the upper part of the bone, or carelessly run his hand over it under the preconceived idea that where no blow has been inflicted high up in the leg, where a wrench of the ankle is the only injury that has occurred, no fracture of the upper part of the fibula can exist; acting so, he may readily omit to notice a fracture—one which can be readily detected. Though such fracture will not permanently damage the

^a Pathologie Externe. T. II. P. 198.

^b Principles and Practice of Surgery. Third Edition. P. 285.

^c Traité Iconographique. P. 296.

patient if undetected, let another surgeon detect it by any chance, and I am certain not all the quotations that can be made from the "First Lines" or "Holmes' System" will save the reputation of the surgeon, or satisfy the patient with his treatment.

M. Maisonneuve, while he recognised that fracture of the fibula could occur in its upper third as the result of a violent wrench of the ankle, was led far astray by his method of investigation—so far astray that all subsequent writers have denied the existence of such injury as he describes. Malgaigne^a distinctly asserts that although such injury has been produced artificially, "*les fractures par diastase n'ont pas encore été observées sur le vivant.*" In support of his statement he well remarks that the only instance of the injury recorded by Maisonneuve as having been seen by him in the living, is simply an ordinary fracture of both bones of the leg. Maisonneuve asserts that a violent twist outwards and backwards of the foot can rupture the inferior tibio-fibula ligaments and the fibres of the interosseous ligament, and, twisting the fibula, cause it to break, after its connexions with the tibia are separated below, at a constant point three fingers' breadth from its upper end. Separation of the malleoli and displacement of the foot outward are with him essential results of this injury. The want of positive evidence of the occurrence of this injury, except as the result of *post mortem* experiments, and the over-statement of the amount of laceration and separation of the ligaments and bones of the leg near the ankle seem to have prevented the acceptance of M. Maisonneuve's theory. I think the following facts are evidence that a fracture of the fibula does occur at this part of the bone, and by wrenching of the ankle, but, as far as our experience or our preparations prove, without such separation of the bones of the leg at the lower joint as would justify the use of the title diastasis. The same evidence will correct the statement of Maisonneuve that this injury is the property of the aged, who have tough ligaments and brittle bones, and that there is nothing constant in the direction of the fracture.

The following observation in the living establishes the occurrence of the fracture, and in the young subject:—In the last spring, at a country pic-nic, a full-grown lad, between sixteen and seventeen years of age, was romping with a young man, dodging him around the stem of a large tree growing on sloping ground, which was slippery with recent rain. In a struggle to avoid being caught, he slipped, with his foot extended and pointed downwards on the

^a *Traité des Fractures.* T. I. P. 807.

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sloping ground. He felt his ankle wrenched, and a snap of something in his leg which gave him acute pain. He did not fall, nor was he struck or kicked in the leg. He felt faint for a few moments, but quickly recovered, so as to make his way some distance with only the help of a comrade's arm. He so reached the road, and finally a railway station, and travelled home, getting some surgical advice on the way, but only the opinion that he had sprained his ankle. Next day he applied at Sir P. Dun's Hospital for relief. He could not put the injured leg under him, so as to support his weight, but he could hop along on the sound foot, just bearing on the toe of the injured limb; he could move the knee and ankle on the injured side freely as long as he did not attempt to bear on them; he complained of the ankle and outside of the limb, and said he had sprained his ankle. The usual signs of sprain, commonly so well marked the day after the injury, were wanting; there was neither swelling nor ecchymosis around or beneath the joint, nor was it acutely tender to the touch. Any movement bringing the astragalus to bear against the fibula caused pain, but remote from the joint; a hand passed over the outside of the limb readily recognised that this pain was most intense a little below the upper end of the fibula. Here a systematic examination detected a point of maximal pain on pressure, and a yielding of the fibula, with crepitus. The application of a starch bandage, and rest for some weeks, completed the treatment. There was not at any time, either before or after the application of the bandage, deformity of the ankle or of the malleoli.

The examination of our collection* of fractures of the bones of the leg satisfies me that fractures of the upper third of the fibula from indirect violence are not uncommon. I hope to show from the specimens themselves that the fracture is the result of force acting on the ankle-joint without diastasis of the tibio-fibular joint, but probably a force which, under favourable conditions, such as Maisonneuve has observed in experiments on the dead body, might produce this result as well as the fracture. I take only specimens in which both bones of the leg have been preserved—at least four others, similar in all respects, are preserved, but, the tibiæ being wanting, I exclude them. I may notice of the entire series, both those that are complete and the fibular fractures which I consider identical with those that are complete, that all, except one, are from the left side of the body—nine left to one

* Museum of Pathology, Trinity College, Dublin.

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right. The number of complete specimens is six. A glance at these placed side by side satisfies one that the fractures of the fibulæ are similar in position, and alike in being all extremely oblique—characters which establish the fact that they have been caused by violence acting indirectly. In four the path of the fracture is absolutely the same. Starting above on the antero-internal edge of the bone, it passes obliquely downwards and outwards, involving the bone for a distance which varies from one to two inches. In two the obliquity varies by placing the highest point of the lower fragment on the posterior or postero-external aspect of the bone. One of these latter shows that a slight comminution occurred at the anterior aspect of the fracture. In all the fractures occur in the upper third of the bone, varying slightly in their distance from the upper end. So much for the family features of this group. What evidence do the specimens afford in support of my statement that they have been caused by violent wrenching of the ankle, such as in Maisonneuve's experiments produced diastasis of the inferior tibio-fibular joint, with fracture of the fibula in its upper third? One (No. 1467, Fig. 1) of the first four presents unmistakable evidence of a fracture passing through the inferior articular surface of the tibia detaching its posterior border; at the malleolus this fracture mounts to the middle of the depression which corresponds to the apex of the deltoid ligament; from this it bends forwards (*a*, Fig. 1), so as to detach the tip of the malleolus. The piece of bone lying behind the first line of fracture, including the posterior articular border of the tibia and a portion of base of the malleolus, has slipped backwards a trivial distance, while the detached tip of the malleolus has passed forwards a little space. The entire mortice of the ankle-joint has so got a cast outwards and backwards. All the joint has been slightly deformed by an arthritis which so commonly results from such injuries, and traces of inflammation extend along the surfaces of both tibia and fibula, shading off towards the upper extremities of the bones. One familiar with these appearances would not hesitate to recognise here the effects of a traumatic periostitis extending from the lower extremities of the bones.

The next specimen (No. 352, Fig. 2), which tells the same tale, is one of those two which I noted as having the path of the fracture of the fibula such as to place the upper extremity of the lower fragment on the posterior surface of the bone. Here, on the inferior articular surface (Fig. 3) of the tibia and

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on its malleolus, paths of fracture are seen, unmasked by inflammatory changes, identical in their position with those I have just described; hardly any displacement of the articular surface or of the malleoli has occurred. In this specimen the traces of traumatic periostitis are visible only about the attachment of the inferior tibio-fibular ligaments and the lower part of the attachment of the interosseous ligament. Looking at these small periosteal deposits of bone—the result of the injury to the ankle and its ligaments—one is at once struck with the close correspondence of their texture and colour with the surface of the callus which unites the fibular fracture—strong evidence that the fractures of the tibia, the injuries to the inferior tibio-fibular ligaments, and the fracture of the fibula are coeval. All of these specimens exhibit traces, as I have noticed in detail in dealing with these special examples, of traumatic periostitis affecting the entire surface or the limited region of the tibio-fibular ligaments, to a degree which is not observed even in extensive fractures of the shafts of both bones of the leg—a fact explicable by the character of the injury I have assumed to be common to all. It may, too, have been in some measure rendered more distinct by such indiscretion in the use of the limbs as results in cases where fractures have escaped detection, as, I dare say, many of these have.

In examining the details of these specimens, which carry all their history inscribed on their surfaces, as I cannot help asserting that they do, the conclusion is irresistible that the violence which caused their injuries was a wrench or shock to the ankle-joint, twisting it outwards, while the foot was extended. Nothing else will satisfy the conditions laid down by these specimens. I may fairly conclude that those specimens which are identical with these, so far as the fibular fracture is concerned, but which exhibit no deformity or fracture of the ankle, are examples of the injuries caused by similarly-acting violence, less only in the degree of shock which was brought to bear on the tibia. That this is not a forced conclusion may be seen by comparison of these injuries with the analogous fractures of the fibula near the ankle, which exhibit every gradation of the results of indirect injury; first, and most simple, the fractured fibula; after this, the various degrees of displacement of the ankle, with fracture of the inner malleolus or rupture of the internal lateral ligament.

I have, then, I believe, shown ample proof that fractures of the upper third of the fibula from indirect violence, acting through

the ankle-joint, are not uncommon; and that these fractures can occur either alone, or may be accompanied with damage to the posterior part of the inferior-articular surface of the tibia and its malleolus.

Further, that traumatic periostitis, originating at the ligamentous connexions of the tibia and fibula inferiorly, is a common attendant on the injury which produces the fracture of the fibula, but that there is no evidence that diastasis of the inferior tibio-fibular joint occurs as a necessary part of the injury.

ART. V.—*Successful Removal of the Uterus and One Ovary for the Relief of a Subperitoneal Uterine Tumour.* By WILLIAM THORNLEY STOKER, M.D.; Fellow, Member of Council, and Professor of Anatomy, Royal College of Surgeons in Ireland; Surgeon to the Richmond, Whitworth, and Hardwicke Hospitals; Surgeon to Swift's Hospital for Lunatics; formerly Surgeon to the City of Dublin Hospital.

THE surgery of the abdominal and pelvic cavities has made such huge strides within the last few years, and engages the attention of our profession so closely, that I am glad to offer the details of a case in which I have, with complete success, removed the uterus and one ovary by means of an abdominal section, for the relief of a large uterine subperitoneal tumour.

It will be conceded that the treatment, by surgical means, of no other part of the human frame has undergone such a complete improvement and revolution of late as has that of the uterus and its appendages. It is but a few years since a host of diseases of these parts, which were imperfectly understood if understood at all, have been explored, explained, and illuminated—have had their pathology made clear, their causation defined, their symptoms and treatment correctly laid down—have been, in fact, removed from the regions of obscurity and uncertainty, and placed in the realms of reasonable observation and intelligent treatment.

The class of cases in which the opening of the peritoneal cavity becomes a necessary step of surgical interference has at this moment a surpassing interest, not merely because of the great issues involved on account of the importance of the organs we seek to remove or repair, but also because of the special bearing on intra-peritoneal operations which the great surgical problem of the day—that of antiseptic surgery—has. Even the momentous question of

opening joints wanes in significance beside that of laying open the abdomen; for while in many cases one involves but the repair of deformity or the salvation of the patient from a wasting and dangerous process, the other in all cases is an issue of life or death.

Although ovariectomy has become such a successful procedure, the operation of removing the uterus through the abdominal wall has not yet showed a large proportion of successful results, and has not, indeed, as yet been done with sufficient frequency to justify any statement as to what may in future be expected from it. The subject is one of such interest that every operation, whatever its result may be, has a statistical value, even if it has no higher claim to attention, and therefore it is without apology that I introduce the case of E. H., who is, as far as I can ascertain, the first person on whom hysterectomy through the abdominal wall has been successfully performed in Ireland:—

CASE.—She was a slender, sallow, dark-haired, but active-looking person, above the middle height, twenty-six years of age, and of rather a better class than the majority of hospital patients. She was admitted into the Richmond Hospital on the 31st of January, 1878.

She had borne one healthy surviving child six years before, but had not since been pregnant.

Two years previous to her admission she noticed a tumour on the left side of her abdomen, which at that time gave her no inconvenience, but which, two months later on, began to increase in size, and to produce some pain in the lower part of the abdomen when she walked. It did not, however, cause her any great inconvenience, or interfere with her general health to a marked extent. She menstruated regularly, but during the early stages of her disease each catamenial period had lasted from four to seven days.

She had sought advice at another hospital during the year previous to that in which I first saw her. I believe she was there examined by a surgeon of eminence, who, having explored the tumour with an aspirator, came to the conclusion that it was solid—was probably a uterine fibroid—and, not considering her at the time in a suitable condition, postponed operative treatment.

At the time she came under my notice her general health was fairly good, her menstruation was regular both as regards interval and duration, and was free from pain. The tumour caused her little inconvenience, and permitted her to take moderate exercise. The growth was easily perceived, causing considerable protrusion of the anterior abdominal wall, and lying chiefly to the left side. It was tolerably firm to the touch,

giving a doubtful sensation of fluctuation both to the finger and when percussed—so doubtful as to be of little or no value in guiding me as to whether I had a solid mass to deal with, or fluid contained in a tense, thickwalled cyst. How deceptive this feeling was may be judged by the fact that during the operation subsequently undertaken, and even when the division of the abdominal wall had been completed, and the surface of the growth laid bare to the finger, it was still difficult—nay, impossible, to say whether it was solid or fluid, and it was only when an attempt was made to push a trochar into it that its solidity was demonstrated. An examination of the disease later on showed that its extreme sponginess and elasticity conspired to produce this deceptive condition.

It seemed to be a smooth, rounded mass, with a small protuberance attached to its upper and anterior surface, which could be readily felt and rolled from side to side by pressure, and which, from its freedom of movement, had apparently a narrow connexion with the rest of the tumour. The introduction of a sound showed the uterine cavity to be of normal size, and it was peculiar that when the sound was *in situ*, with its handle projecting from the vagina, the point of the instrument was turned to the right when the large posterior mass was pushed to that side, and to the left when the small anterior offset was pushed to the right. This was explained after removal, by finding that the attachment of the small secondary tumour to the great one was such that it produced a revolution of the larger one towards the side opposite to that to which itself was pushed.

This feature of the antagonistic mobility of the two parts of the growth is one of which I can find no record of a similar condition in any reported case of uterine tumour.

When the left index finger was introduced into the rectum, and the sound placed in the uterus with its point turned backwards, the posterior wall of the womb could be explored, and appeared to be of normal development and character. This has since been explained by finding that the cervix and posterior part of the uterus adjoining it were about as large as in the healthy state, the fundus and front of the meridional zone being the seat of the tumour, and the cervix with its zone forming a sort of pedicle. The vagina was not elongated. The circumference of the abdomen at its greatest girth, a little above the *cristæ ilii*, was twenty-seven inches. The pelvic cavity, when examined by the finger through the rectum and vagina, was free from any unusual presence, and of normal capacity. There was no interference with either urination or defæcation.

During her residence in hospital the tumour continued—at first slowly, but afterwards rapidly—to increase in size, the globular offset, of which I have made mention, being especially active in its growth, and having, at the time of operation, a bulk almost as great as the head of a nine months' foetus. When last measured, on June 5th, the girth of the

abdomen had increased nine inches since her admission, and measured thirty-six inches. At this time a very small amount of ascitic fluid had found its way into the peritoneum.

It will be seen that the case was one presenting many difficulties of diagnosis. It was plain that we had to deal with either a uterine or ovarian tumour, but the numerous contradictory evidences which were present caused great doubt as to the exact state of affairs. On the side of ovarian disease were—the freedom of the pelvic cavity, the ability to pass urine, the rapid increase in the volume of the mass, the normal size of the uterine cavity, the commencement of the tumour on one side, the youth of the patient, the apparent ability to discover a normal uterus by a rectal examination, and the doubt as to fluctuation being present. On the other hand, arguing for the uterine origin of the disease, we had this very doubt as to fluctuation—which cut both ways—the regular menstruation, the little alteration in the consistence of the growth, the comparative good health of the patient, and the rotation of the sound when the tumour was moved.

My final conclusion was that the origin of the disease was probably uterine, and was somewhat uncertain; but that, be it a tumour of the womb or an ovarian cyst, be it solid or fluid, its removal had better be attempted, because the rapid growth it had lately undertaken threatened a speedy breakdown in the patient's health, and an ultimate sacrifice of her life. She had now been four months in hospital, and during the last of these the tumour had taken on very rapid increase, the ascitic fluid I have spoken of had made its appearance, and the woman was visibly commencing to decline in health. She now presented the appearance, when dressed, of a person in advanced and large pregnancy, and had got the sunken hectic look that you see in a consumptive mother about to bear the child whose birth is to be the presage of her own death.

I fully explained the risk of the operation, and the uncertainty as to the nature of her disease to her, and got her permission to operate—nay, more, she was most anxious for an operation, and this in spite of extreme pressure which her friends put on her to decline it. I think she was the best patient I ever saw. From the time she entered the hospital until she left it—during six weary months, at least two of them spent in great suffering—her high courage never failed, her hope never wavered, her trust never shook. No one ever heard her utter a complaint. She came to hospital to be operated on; she was determined to be operated on, and, having been operated on, she was determined to live if she could. I cannot pay too high a tribute to her disposition—and to it, in some measure, I think her ultimate recovery was due.

The operation, which proved one of most extreme difficulty, was undertaken on the 6th of June, 1878, three days after menstruation, and lasted nearly two hours, ether being the anæsthetic used. A thymol spray

was produced by Prof. Bennett, but the result was not an antiseptic one, for, although the dressings were subsequently removed under spray, pus soon showed itself, and the procedure was discontinued.

I first made an incision several inches long in the linea alba, below the umbilicus, and exposed the front of the tumour in the usual way, finding much difficulty in peeling off the omentum, which was very adherent. This was a long and troublesome process, necessitating the application of three catgut ligatures to various parts of the torn epiploon. Having freed the tumour as far as the introduction of the finger into the wound would allow, I endeavoured, as its fluidity was still a matter of doubt, to pass the trocar into it, but found that it was solid and very elastic and resisting. It was now clearly ascertained to be of uterine origin. It was then necessary to enlarge the external wound, which I had to do to such an extent before there was room to extract the tumour, that it reached from near the ensiform cartilage to the neighbourhood of the pubis. After a good deal of manipulation and tearing through of extensive adhesions—which existed on all sides, but particularly in front, where the omentum gave great trouble—the growth was drawn out, and a pedicle, which the cervix uteri formed for it, was ligatured with stout plaited silk. The ligature was applied by passing it twice round the pedicle and tying it tightly, the ends being cut short, and the tumour then removed by an incision through the substance of the uterus, half an inch beyond the point of deligation. It was now found that, owing to its elasticity and vascularity, the pedicle could not be tied with sufficient tightness to prevent the risk of subsequent hæmorrhage, so I transfixed it with a strong pin which was placed externally athwart the wound, so as to secure the stump in view in case bleeding occurred, and another ligature was placed around the pedicle at the point of transfixion and its ends twisted round the pin. The right ovary was removed with the tumour, but the left, not presenting itself, was left behind, as it was deemed inexpedient to prolong the operation, the patient being apparently at the point of death from exhaustion, much blood having been lost. Two tags of bleeding omentum were ligatured and cut short, the peritoneum was rapidly sponged out, a glass drainage tube four inches long was secured in the lower angle of the incision, so as to reach into the pelvis, and the abdominal opening was closed by points of interrupted catgut suture. The usual dressing of Lister was applied, the woman placed in bed, and a reaction from her collapsed condition brought about by the use of warmth and diffusible stimulants. It will be seen that five ligatures of strong carbolised catgut, which had been applied to various bleeding points, were enclosed in the cavity of the abdomen, while one of strong silk surrounded the portion of the pedicle concealed in the wound deeper than the transfixing pin.

Being loyal to antiseptic surgery, and as this case did not yield a

antiseptic result, I should state that I do not claim to have successfully carried out Lister's method—first, because I used thymol, in which I have now no faith, instead of carbolic acid; secondly, because during a brief period of the operation the spray was discontinued, owing to some derangement of the engine; and, lastly, because means were not taken to antisepticise the vagina—a proceeding which reflection will show is necessary in cases where the uterine cavity has been divided, as otherwise it may form a ready channel for the admission of septic matter to the wound.

I need not detail the daily history of the case subsequent to the period of the operation; its progress was gradual, critical, and, for the first ten or twelve days, interrupted by many untoward symptoms. No sooner had reaction from collapse taken place than vomiting set in and continued obstinately for eight days, after which time it subsided. It was combated by the use of various sedatives, and obliged us to have recourse to nutritive enemata to support the patient's strength.

A very troublesome and painful aphthous ulceration of the mouth and fauces appeared on the third day, and persisted until the eighth, when it also mended.

On the sixth day great irritability of the vagina was experienced, accompanied by a foetid discharge from that passage. This lasted for eight or nine days, and was much relieved by injections of diluted Condyl's fluid.

Both pain and want of sleep demanded the frequent use of hypodermic injections of morphia for the first fortnight following the operation.

Her dietary was a matter of much difficulty, owing to the intense gastric irritability which was present, and exercised our culinary knowledge to the fullest extent—indeed, I think that she would have died but for the support afforded by nutritive enemata. The stimulant which agreed best with her was champagne.

A catheter was introduced at regular intervals during the first five days, after which time she passed water easily without assistance.

The bowels acted naturally on the 10th of June, four days after the operation, and continued to do so up to the time of her convalescence, requiring to be occasionally checked by the use of an enema of starch and opium. This was due to the irritability of the lower intestine, produced by the frequent use of nutritious injections.

The dressings were removed on the second day, being saturated by an abundant and very offensive discharge. The upper portion of the wound was now found to be almost healed, while through the drainage tube, and from the neighbouring corner of the incision, flowed a dark and foetid pus. The dressings were renewed every second day from this until the termination of the treatment. The tube was withdrawn five days subsequent to the operation, and the channel where it had

been gradually closed as the quantity of discharge diminished. On the eleventh day the pin with the slough of the pedicle separated, and the deeper portion of the uterine stump with the more remote and earlier applied ligature receded gradually, leaving a thimble-shaped cavity, which was plugged with lint daily, and contracted by degrees, being at the time she left hospital barely large enough to admit a small probe. I may despatch all further mention of this sinus by stating that it remained open and gave exit to a very slight discharge for about twelve months, when the deep ligature which had surrounded the pedicle was extruded through it, after which the opening completely healed.

The temperatures of the case present no feature of note; they were low, averaging from 99° to 101° —the highest point attained being on the fifth day, when the thermometer in the axilla registered 102.2° . On the twentieth day the normal temperature was regained, and the convalescence, which may then be looked upon as having commenced, went rapidly and favourably on.

The woman left hospital on the 1st of August, about seven weeks after operation, in excellent health and gaining quickly in condition.

An examination of the diseased part after removal showed it to be a large myoma, occupying the upper and anterior wall of the uterus, and leaving the cavity of that organ, the posterior wall, the cervix and cervical zone, in their normal condition. The small tumour which had been felt during previous examinations was a secondary growth from the left and upper portion of the anterior surface of the main tumour, and its freedom of movement was now accounted for by the tenuity its attachment was found to have. The tumour was encapsuled in the usual way by the muscular substance of the uterus, and could in many places be separated by a little tearing from its attachments, but over most of its surface the connexions were so strong as to show that in this case at all events the procedure which has been proposed of disencapsuling uterine subperitoneal fibroids through an abdominal incision would have been impossible. Although very tough, and resisting violence to a marked degree, it was spongy and elastic—conditions which accounted for the deceptive feeling of fluctuation it had possessed when *in situ*. The entire mass measured, vertically, eleven inches; transversely, ten and a half inches; antero-posteriorly, five and a half inches; in horizontal circumference, twenty-six and a half inches; in vertical circumference, twenty-six inches; and weighed fourteen pounds.

I saw and examined the subject of this memoir in consultation with my colleague, Mr. Thomson, on the 3rd of December just gone by. She has remained in excellent and vigorous health; her spirits are good; she has grown plump and ruddy, and can discharge her household work as well as at any time of her life. Having one ovary remaining, she is conscious of a slight monthly sensation of menstruation; and from June

to September inclusive of 1879 she menstruated slightly, the discharge being scanty, lasting for one day on the first occasion, and for three days on the subsequent ones. Since September it has not appeared. It came evidently from the cervical canal and whatever remains of the neighbouring cavity.

Her bowels and bladder act naturally and without trouble. The vagina is as pliant, healthy, and free from contraction or adhesion as it would be in a woman who had not undergone operation. To both the finger and speculum the os uteri and cervix present the characters you would expect in a healthy woman who had borne one or two children. The sound can be passed for about three-quarters of an inch into the cervical canal, and in the normal direction.

Apart from the interest this case possesses in having a successful issue out of a disease which but a few years back was regarded as beyond the powers of the surgeon, and of which a skilful and enterprising gynæcologist nine years ago, when writing of uterine fibroids, said—"Of these the extra-uterine or subperitoneal, being entirely beyond the reach of treatment, must be dismissed after a brief notice"—apart from this, I say, and independent of some other points of interest which will have suggested themselves to those conversant with uterine disorders, this case offers one or two matters for reflection.

I think it affords very substantial testimony to the value of the drainage tube, for with every knowledge of the accommodating power of the peritoneal surface and its capacity for ready absorption, I cannot believe that the large amount of offensive discharge which was voided could have been absorbed, or even that a considerable part of it could have been taken up, without doing fatal mischief. In my opinion the patient would have died but for the ready exit afforded by the tube to poisonous matter. In speaking of the drainage tube I would call attention to the fact that it is not necessary to leave it *in situ* for a very long time, because after its removal a sinus remains which only closes as the discharge diminishes. It is then, I think, only necessary or advisable to leave it in for sufficient time to establish this channel, for it will be readily conceded that, while it serves an excellent purpose, the tube itself may be a cause of irritation, and should be dispensed with as soon as possible. In this instance I removed it on the fifth day, and in future I am disposed to do so at an earlier moment.

The question of the propriety of leaving one or both ovaries behind when the uterus has been removed, is one about which much

difference of opinion may arise. It may be argued that the monthly discharge of the contents of one or more Graafian vesicles into the peritoneal cavity is an undesirable circumstance, and might be the cause of subsequent mischief. For my own part I do not see how this could be the case. The rupture of the peritoneal covering of the ovary at the point of discharge is not more likely to cause irritation than it would in the case of a healthy woman who had never been the subject of operation, and in whom the peritoneum is infinitely more tender and susceptible than in a person in whom its cavity has been laid open for disease. Besides, the size of the discharged ovum— $1\frac{1}{2}$ of an inch—and the minute quantity of fluid which accompanies it, forbids serious apprehension from its presence in the peritoneal sac.

On the other hand, I consider that, provided the ovaries be healthy, a distinct advantage must obtain from their being left *in situ*. A female possessed of these organs would—accidental circumstances being set aside—enjoy better health and spirits than one in whom they were wanting, just as a male possessed of testicles is more active, vigorous, and intellectual, than one who has lost these appendages, or in whom they are diseased, or wanting from arrest of development.

In the case I have recorded the ovary was left behind more from accident, from the haste demanded in the completion of the operation, than from deliberate design; but in any future case in which I may have to remove the uterus it is my present intention to leave one or both ovaries behind, provided I find them healthy.

Bearing on this question I may mention a case of M. Schwartz, recorded in the *Archiv für Gynäkologie*, and referred to in *The British Medical Journal* of the 10th Jan., 1880, in which a midwife violently tore away during labour the whole of the uterus, under the impression that it was the afterbirth. The ovaries and Fallopian tubes remained in the abdomen. The woman recovered in fifteen days, and has since enjoyed good health. Sexual desire continued to exist, although less pronounced than formerly.

I cannot finish this memoir without recording my thanks to my colleagues for the assistance they afforded me in this very difficult case, and particularly I would express my gratitude to Dr. Kidd for the advantage accorded to me by his experience and help. Of Mr. Butt also, the pupil who took charge of the case, and to whose devotion the woman in a large measure owes her life, I cannot speak too highly. With a full knowledge of the generous attention

often accorded by students to the cases under their care, I have never seen such untiring attention, and so complete a sacrifice of self, as was offered by this gentleman in this instance.

ART. VI.—*On the Compulsory Notification and Registration of Infectious Diseases.*^a By JOHN WILLIAM MOORE, M.D., M.Ch., Dubl.; F.K.Q.C.P.; Physician to the Meath Hospital and to Cork-street (Fever) Hospital, Dublin; Lecturer on Practice of Medicine in the Carmichael College of Medicine and Surgery; Ex-Scholar and Diplomate in State Medicine, Trinity College, Dublin.

MANY years have passed since the late Dr. Henry W. Rumsey, of Cheltenham, one of the most distinguished of the founders of State Medicine, wrote the following words:—"There are literally no published records of the cases of sickness attended at the cost of the community. The sanitary state of the people is, therefore, inferred solely from the number of deaths—that is, from only one of the results of sickness—no public account being taken of the number and duration of the attacks which shorten the effective life-time of the population." He continued:—"Facts are accumulating to prove that the mere number of deaths occurring in any locality bears no constant or even approximate ratio to the real amount of unhealthiness existing there. As a necessary result of improvements in domestic management and medical treatment, and owing to the removal or absence of those more virulent agents of destruction which prematurely sever the threads of life, its duration has been lengthened in our great cities, but at the same time the sickly and infirm period of existence has been prolonged, probably in a greater degree than even life itself. Chronic diseases, or, at least, functional disorders, have increased, vital force is lowered, man's work is arrested, his duties are unperformed, his objects fail, though he still lives. Weakly, diseased children are now mercifully helped, as they never were in olden time, to grow up into weakly, ailing adults, whose children inherit their unsoundness. Is this true sanitary progress? Does it deserve the ostentatious parade of a decreasing death-rate?"

When these eloquent words were penned, only a few far-sighted thinkers like Rumsey, Acland, Farr, and Stokes, had turned their

^a Read before the Dublin Branch of the British Medical Association, at the Annual Meeting, on Thursday, January 29, 1880.

attention to the registration of disease; and in this connexion I would particularly allude to a thoughtful paper by Dr. Arthur Ransome, "On the Need of Combined Medical Observation," which was published in *The British Medical Journal* of October 8, 1864. At the present day, however, it seems to be generally acknowledged that statistics of deaths, although founded on a more or less complete system of registration, are to a large extent wanting in precision and in scientific value. But, nevertheless, the advantages which have ever resulted from an approximative knowledge of the variations in the death-rate from season to season, and of the probable causes of the same, more than counterbalance the defects of the registration system as at present organised. How far these shortcomings may be obviated is a question which has yet to be answered. But even granting that our registration system may be perfected, we may well ask whether there is not a further step to be taken—whether it would not be politic to extend the principle of registration, which has hitherto been restricted to *mortality*, to *disease* also. Nor should it be forgotten that even in the United Kingdom the registration of epizootic infectious diseases is already in force—a fact which cannot but be regarded as a strong argument in support of the necessity for, and the practicability of, a registration of infectious diseases affecting mankind.

Viewed as a problem in political economy, there can be no doubt regarding the paramount importance of ascertaining the actual sanitary state of a population at any given time.

Death is one thing—disease is essentially another. An epidemic of influenza or of *rötheln*, characterised perhaps by a very low percentage of mortality, may, notwithstanding, by its mere excessive prevalence, paralyse a community to a far greater degree than a very fatal, yet limited, outbreak of cholera. Sir Thomas Watson states,* on the authority of the "Transactions of the College of Physicians," that on the 2nd of May, 1782, Admiral Kempenfelt sailed from Spithead with a squadron, of which the "Goliath" was one. The crew of that vessel were attacked with influenza—"la grippe," as the French expressively term it—on the 29th of May, and the crews of the other vessels were at different times affected; so many of the men being rendered incapable of duty by this prevailing sickness that the whole squadron was obliged to return into port within a few days. Mercatus asserts that before the

* Lectures on the Principles and Practice of Physic. Third Edition. Vol. II. Page 41.

beginning of autumn, in the year 1557, influenza attacked all parts of Spain *at once*, so that the greatest part of the population in that kingdom were seized with the disease almost on the same day. At St. Petersburg, in the epidemic of 1782, Maertens says that on a cold night the thermometer rose 30° Fahrenheit, and next morning 40,000 people were taken ill with the influenza. We can readily imagine what serious consequences might possibly attend outbreaks of sickness such as these, although they would not necessarily leave their mark upon the statistics of mortality.

Again, under ordinary circumstances the prevalence, or otherwise, of an endemic disease stands in no direct relation to the published returns of mortality attributed to it. The argument in favour of registration of disease deducible from this fact applies *à fortiori* in the instance of an epidemic, where the ratio of cases to deaths is of a most varying and uncertain character.

Difficulties, no doubt, stand in the way of carrying out an effective system of disease registration, but they are not insurmountable, and the fact that several European Governments have long since inaugurated and prosecuted such a system should encourage us in essaying to follow their example. In the vanguard of progress in this direction the Scandinavian nations occupy the place of honour.

For many years back the College of Health at Stockholm has received monthly and annual reports of the sanitary state of the country, including an account of the prevailing endemic and epidemic diseases, from a corps of officially appointed medical men, styled provincial and district physicians, subsidised by the State. The monthly reports furnished by these physicians are published from time to time in the Swedish medical periodical *Hygiea*, while the annual returns are compiled and arranged by an official whom we may call the Swedish Registrar-General, and are finally presented to the king in the form of a "blue-book," or volume of official reports and tables.

A similar organisation exists in both Norway and Denmark—so far, at all events, as relates to the registration of epidemic diseases. In the "Weekly Report of Diseases, Deaths, and Births in Copenhagen," communicated by Dr. P. A. Schleisner, Medical Officer of Health, and published by authority of the Municipal Council, the first table gives the cases of epidemic and contagious (infectious) diseases reported to him by the medical men practising in the Danish capital. The notification of these affections is compulsory.

Our American cousins have also adopted a system of registration

of disease in some of their large cities, and the authorities of some of the Swiss cantons are following their example.^a

Before I proceed to sketch the progress already made in establishing a registration of disease in our own country, it may not be amiss to state that the powerful Association of which we—the Dublin branch—form a by no means unimportant integral part, have, for fifteen years at least, consistently and constantly promoted the registration of disease. Dr. Grimshaw, the present able Registrar-General for Ireland, stated, in his recent address to the section of Public Medicine at the annual meeting of the British Medical Association in Cork,^b that at the Leamington meeting of the Association, in 1865, a committee was appointed to promote the registration of disease. This committee attempted to establish a voluntary registration of sickness in public practice, but the attempt ultimately failed. Unsuccessful, but not discouraged, the committee never ceased urging upon the Government the importance of the systematic registration of disease, and suggested it as a fit subject for the consideration of the Royal Sanitary Commissioners. A national system of registration of disease in general unfortunately still remains a thing of the future.

There is, however, one class of affections which, in the interest of the community, should be registered with as little delay as possible—at least in all large towns. I allude to epidemic infectious diseases. Instances are constantly coming under the notice of hospital physicians in which scarlatina, smallpox, measles, and fever, have spread far and wide, because the first case of illness, either through wanton neglect or ignorance, was not isolated in due time. Some weeks ago several cases of scarlatina were admitted into Cork-street Hospital from a tenement house in which a child died of this disease and was waked. No medical man had been called in to see the patient, nor was any report made to the sanitary authorities until other children in the house had been attacked. At least two lives were lost in this instance, which is only one out of many which might be adduced.

Two things would seem to be necessary in the case of outbreaks of epidemic infectious diseases—first, *the immediate compulsory notification of such outbreaks to the sanitary authorities*; secondly, *the early registration of all cases of these affections, and the publication of*

^a See Brit. Med. Journal, December 27, 1879. Page 1030.

^b The Public Work of the British Medical Association. Dublin: Fannin & Co. 1879. Page 10, *et seq.*

the tabulated results at frequent intervals by the General Registration Offices of each division of the United Kingdom. Towards securing the second object but little has yet been done. As regards the notification of infectious disease, on the contrary, Parliamentary powers have already been sought and obtained by fifteen towns in England and Scotland—viz., Huddersfield, Bolton, Greenock, Burton-on-Trent, Nottingham, Jarrow, Llandudno, Warrington, Blackpool, Norwich, Edinburgh, Rotherham, Leicester, Blackburn, and Derby.

Mr. Ernest Hart, the chairman of the Parliamentary Bills Committee of this Association, in an admirable Report "On the Recent Progress of Legislation with regard to the Notification to Sanitary Authorities of the Occurrence of Cases of Infectious Disease,"^a gives a synopsis of the clauses in the local Acts of Parliament relating to such notification in the towns mentioned above. From this synopsis it appears that by the Bolton Act, and by the Jarrow, Llandudno, Warrington, Blackpool, Rotherham, Leicester, and Derby Acts, founded more or less upon it, the duty of making this notification is imposed alike on the occupier and on the medical attendant—the *primâ facie* duty of complying with the statute is cast upon the occupier, and a fee of half a crown in most cases, but only one shilling in the case of Jarrow, is payable to the medical man for his certificate. The Burton-on-Trent and Blackburn Acts require the occupier to give notice only when a medical man is not called in, and, as Mr. Hart says, thus obviously offer a premium to delay in seeking for medical advice in cases of infectious disease. The Edinburgh Act, again, by imposing no duty at all upon the occupier, is likely to lead to the employment of quacks and unregistered practitioners to even a greater extent than at present. At Greenock the notification, to be given by the householder to the sanitary inspector within twenty-four hours, is required only on its being certified by the Medical Officer of Health that "epidemic, contagious or infectious disease," exists within the limits of the town. At Nottingham and Norwich, as well as, to a less extent, at Huddersfield, the plan proposed by the committee of this Association has been adopted. "By the Nottingham plan," Mr. Hart observes, "the medical attendant is required to fill up, sign, and deliver to the occupier or person having the management or control of the building, or, in case such person is suffering from infectious disease,

^a See Brit. Med. Journal. Nov. 22, 1879. Page 830.

to the person in charge of the patient, a certificate, which must be forthwith delivered *by the person to whom it is given* by the medical practitioner, at the Town Hall, to a clerk or servant of the Corporation. If no medical attendant be called in, the occupier or other person is, so soon as he becomes aware of the existence of the disease, to give notice to the Corporation forthwith. In the event of the sufferer not being a member of the occupier's family, the head of the family (resident in such building) to which the patient belongs, or, if there be no head, the patient himself (unless prevented by such disease, or by youth) is to give notice of the existence of the disease to the occupier or other person as above."

In the Report of the Committee on the Registration of Disease, adopted by the British Medical Association in 1876, the position of the medical profession in regard to the notification of infectious diseases is thus ably summed up:—"The authoritative declaration of the nature of the disease must necessarily come, in the first instance, from the medical attendant. On the other hand, to be obliged to furnish information to a public official with regard to sickness occurring in a family, might reasonably be resented by the medical profession. It would be regarded by many not merely as an unnecessary addition to their work, but as an inquisitorial test of the extent of their practice, and as leading to a breach of professional confidence that might cause annoyance both to doctor and patient. . . . No such objections apply to the proposal to make the householder responsible for the declaration of the presence in his house of diseases likely to be injurious to the community."

It is sincerely to be hoped that an effort will be made, without delay, to secure for Dublin the advantages of some such system of notification and registration of infectious diseases. Any system of the kind should be carried out not merely within the municipal boundary, the limits of which are now more than ever artificial, but also in the adjacent townships. For registration purposes, the Dublin Registration District would seem to be a suitable area for the application of an Act of Parliament. I feel sure that the Registrar-General for Ireland would gladly afford every facility for the organisation of an efficient system of disease registration, once the necessary Parliamentary powers have been obtained.

As to the nature and scope of those powers, I cannot do better than conclude this brief *résumé* with a model clause for an Act of Parliament, drafted by Mr. Ernest Hart, and based partly upon

the Nottingham Act, already referred to, and partly upon general experience of the working of the system of disease registration:—

“ In order to secure that due notice be given to the sanitary authority of any inmate of any building used for human habitation in the district who is suffering from smallpox, cholera, typhus, typhoid, scarlet, puerperal, or relapsing fever, diphtheria, measles, or erysipelas, the following provision shall have effect—that is to say:

“ 1. If any such inmate be suffering from any such disease, and no medical practitioner be attending on, or have been called in to visit, such inmate, the occupier or other person having the management or control of such building, or, if such occupier or other person be prevented by disease or otherwise, the person in charge of such inmate shall, so soon as he shall become aware of the existence in any such inmate of any such disease, forthwith cause notice thereof to be given to the sanitary authority at their office.

“ 2. If the person suffering from the disease be not a member of the family of such occupier or person, the head of the family (resident in such building) to which such inmate belongs, or, if there be no such head, then such inmate (unless prevented by reason of such disease or of youth) shall, on becoming aware of the existence in such inmate or in his own person, as the case may be, of such disease, forthwith give notice thereof to such occupier or person.

“ 3. Every medical practitioner attending on or called in to visit such inmate shall, on becoming aware that such inmate is suffering from any such disease as aforesaid, forthwith fill up, sign, and deliver to the occupier or person having the management or control of the building, or, in case such person is suffering from such disease, to the person in charge of such inmate, a certificate stating, according to the forms prescribed and supplied to him by the Corporation, the name of such inmate, the situation of such building, and the name of such occupier or person, and the nature of the disease from which such inmate is suffering.

“ 4. The person to whom such certificate shall be given by the medical practitioner shall forthwith deliver the same, or cause the same to be delivered, at the office of the sanitary authority [to a clerk or servant of the authority in attendance there].

“ 5. The sanitary authority shall supply gratuitously to every registered medical practitioner resident or practising in the district forms for the certificate by such medical practitioner of the particulars

hereinbefore mentioned of cases of infectious disease attended by him; and the authority shall pay to every medical practitioner who shall, in pursuance of this section, duly give any such certificate, a fee of two shillings and sixpence in respect of the same; provided that more than one fee shall not become payable under this section within an interval of thirty days to the same medical practitioner, for certificates given by him in respect of the same disease occurring in the same building.

[“ 6. The sanitary authority may from time to time, by resolution, order that, subject to the approval of the Local Government Board, any acute infectious disease, other than those above mentioned, shall be deemed to be within and subject to the provisions of this section.]

“ 7. Any such order of the sanitary authority may be permanent or temporary only; and, if temporary, the period during which it is to continue in force shall be specified therein; and when the Local Government Board have approved of any such order, the sanitary authority shall give public notice of the order by causing a copy thereof to be affixed to the principal door of every church and chapel in the district to which notices are usually affixed, and by publishing the same by advertisement in some one or more of the local newspapers circulated in the district; and, after such public notice has been given, the provisions of this section shall, so long as the order continues in force, apply to the acute infectious disease specified therein, in like manner in all respects as if the disease were mentioned in this section.”

With regard to the preamble to this model clause, it would seem desirable that the infectious diseases should in each case be scheduled, and that the Act should give power to the Local Government Board to alter or add to the list of such diseases. In sub-clause 3 it would be well to insert, after the word “certificate,” the words “according to the schedule to this Act.” In sub-clause 4, and in the proposed certificate hereto appended, the words “to a clerk or servant of the authority in attendance there” might very well be omitted. Sub-clause 6 should also be omitted, for it gives to the Sanitary Authority a discretion in the matter which is not expedient. For the same reason sub-clause 7 would require alteration.

I append also a model form of the certificate to be given by medical attendant to the occupier, for transmission by the latter to the sanitary authority.

"_____ Improvement Act, _____ Section _____.

“Pursuant to the above-mentioned Act, I hereby certify and declare that, in my opinion, the undermentioned person is suffering from a disease within the terms of the said Act.

" Dated the day of 18 .

" (Signed)

“ Medical Practitioner, duly registered.

" 1. Name of person suffering from the disease,

" 2. Situation of the building wherein such person is,

" 3. Name of occupier or other person having the management or control of the building,

" 4. Nature of the disease,

"To Mr _____ of _____

“Take notice that this certificate must be forthwith delivered at the office of the sanitary authority [to the clerk or servant of the authority in attendance there], under a penalty not exceeding pounds.”

For the Registration of Infectious Diseases a somewhat different machinery will be required. It does not appear just or expedient to inflict upon the relatives of the persons attacked with illness the duty of *registering* the disease. For my own part I do not see why medical practitioners could not as easily fill up disease certificates as they do death certificates, blank forms and addressed envelopes to the General Registration Office being supplied them for the purpose. Intentionally I say "addressed envelopes to the General Registration Office," for medical men might reasonably object to the extent of their practice being scrutinised by the Deputy Registrars throughout the city, whereas no reasonable exception could be taken to the confidential and direct transmission of the requisite information to the Registrar-General, either at stated periods or as the cases of disease came under observation.

ART. VII.—*The Administration of Ergot in Labour: its Advantages and Dangers.* By GLYNN WHITTLE, M.A., M.D., Univ. Dubl.

THE time-honoured struggle between ergot and the forceps appears likely to end in a victory for the latter. There is a growing tendency in tedious labour to deliver with the forceps without first stimulating the uterus with ergot. It is generally admitted that the drug may destroy the foetus by producing tonic uterine contraction, while a rigid os, contracted pelvis, or resisting perinæum

obstructs the passage of the child. Death may arise from interruption to the placental circulation or from pressure on the child's head. Happily these dangers are well understood, and fatal accidents of this nature are now no longer common. There can be no doubt, moreover, that ergot, judiciously administered, will often save a lying-in woman from the necessity of a forceps delivery; and this is important, especially in primiparæ, where there is a risk of perinæal laceration. If there is reason to fear *post partum* hæmorrhage, ergot should always be given before the child is born. The fifteen to thirty minim range of the Pharmacopœial liquid extract is practically useless, but there is a limit to the dose which it is desirable to give. Two fluid drachms may be mentioned as a maximum, but occasionally it is justifiable to repeat this quantity. The following is a good rule for the young obstetrician to bear in mind:—"Never administer ergot until the labour is so far advanced that it could, if necessary, be easily finished with the forceps. Should tonic uterine contraction follow, threatening the child's life, but not terminating the labour, recourse may be had to the forceps."

The attention of the profession has also been directed to another source of danger arising from ergot. If the placenta happens to be morbidly adherent, the danger of the complication may be greatly augmented by *post partum* increased uterine contraction, due to the influence of the drug. I was called to attend a young lady, aged twenty, where this accident occurred. She had been married at eighteen, and at nineteen I had delivered her of a seven months' child. The second labour was rather tedious, but terminated with the assistance of ergot. Immediately afterwards the uterus contracted very firmly, the placenta remaining. The os uteri gripped the umbilical cord like a vice, and this state of things remained for an hour, or, if anything, grew worse. I was reluctant to interfere, because the patient was a small-made woman, and a nervous and hysterical subject. However, I dreaded the risk of leaving the placenta any longer, while the contraction appeared to be permanent and enduring, the uterus closely surrounding the placenta, and the os firmly embracing the cord. So I passed my hand into the vagina; I then found that I could not without much difficulty pass even the index finger into the uterus. At last I succeeded in doing so, the patient getting quite hysterical and jerking her body about in an alarming manner almost all over the bed. I partially controlled her excitement by telling her that there would be no danger whatever if she would only keep quiet. Then,

by dint of perseverance and patience, and, above all, by taking care never to lose any ground which I had once secured, I managed to stretch the os sufficiently to introduce one by one the remaining fingers and thumb; but so great was the muscular contraction that this had to be done with extreme caution for fear of rupturing the uterus. When I got my hand fairly inside, so general was the contraction and so firm, that I had still to work very slowly and carefully before I succeeded in breaking down the adhesions and bringing the placenta away. Some idea of the difficulty may be conceived when I explain that, during the whole time I was trying to get the placenta detached, the os uteri was contracted round my wrist like an Esmarch's elastic cord.

More than a quarter of a century has passed since Dr. Hardy cautioned us against this danger. Dr. M'Clintock admits the possibility, but considers it of very rare occurrence. Others deny that ergot can produce these results, but I think the facts of the case speak for themselves. There is no doubt that ergot may act powerfully on very young women, whether primiparæ or not, and in such cases smaller doses should be given.

CARBOLATE OF SODA IN THE BACTERIÆMIA OF FROGS.

AT one of the last meetings of the Institute, M. Vulpian presented, in the name of M. Bachi, the result of the latter's experiments on the effects of bacteria in the blood of frogs. They may be summed up as follows:—1st. Bacteriæmia in the frog is always accompanied by an alteration in the blood corpuscles; this alteration is in relation with the severity of the affection, and varies from a simple fold in one of the extremities of the globule and the complete deformation of these elements. 2nd. Bacteriæmia at least in frogs can be successfully combated by a subcutaneous injection of a very small dose of carbolate of soda, the dose necessary for the cure of the affection being estimated at about four-thousandths of a milligramme for each gramme of the animal's weight.—*Revue Médicale*.

S. W.

SORE NIPPLES.

CHAPPED nipples are treated either by the glycerole of the nitrate of lead in a solution containing from twenty grains to one drachm to the ounce, or by a mixture of two drachms of iodoform to the ounce of balsam of Peru. The balsam is used because it disguises the smell of the iodoform.—*N. Y. Med. Record*, 29th Nov., 1879.

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT ENGLISH WORKS ON OPHTHALMIC
SUBJECTS.—Part I.

1. *On Defects of Vision, which are Remediable by Optical Appliances.*
A Course of Lectures delivered at the Royal College of Surgeons of England. By ROBERT BRUDENELL CARTER, F.R.C.S.; Ophthalmic Surgeon to St. George's Hospital, &c. London: Macmillan & Co. 1877.
2. *The Human Eye; its Optical Construction Popularly Explained.*
By R. E. DUDGEON, M.D. London: Hardwicke & Bogue. 1878.
3. *Remarks on the Routine Use of the Ophthalmoscope in Cerebral Disease.* By J. HUGHLINGS JACKSON, M.D., F.R.S., &c. London: J. & A. Churchill. 1879.

HAS the British school of ophthalmology any real existence? This is the question which is immediately suggested on looking over the record of ophthalmic works published in Great Britain during the past few years. We fear the answer must be a decided negative. When we compare the ophthalmic literature of this country with that of Germany, America, or France, we cannot but be struck with its extreme poverty and insignificance. For the past ten years, and up to the present, if we except such admirable works as Dr. Allbutt's and two or three of those at present before us, besides a very few isolated papers—as, for instance, Mr. Brailey's on Glaucoma—we find nothing of marked originality or importance has appeared in the domain of English ophthalmological literature. No doubt this may, to some extent, be accounted for by the fact that it is only quite recently some tardy efforts have been made to raise ophthalmology to its legitimate position in this country. We believe we are correct in stating that the only bodies which require a certificate of attendance on a course of ophthalmic surgery are the University of Dublin and the King and Queen's College of Physicians in Ireland—the former for the degree of bachelor in

surgery, the latter for the membership of the College. No doubt it is gratifying to us, as Irishmen, that our institutions have taken the lead in this matter, but far more than this is really required. Ophthalmology is now entitled to an equal footing with midwifery, and it ought to form an essential part of all examinations for licences and degrees in medicine and surgery, as well as for admission to the military and naval service.

Some time ago a proposal was made, if we are not mistaken, by the present eminent Professor of Surgery, to found a Chair of Ophthalmology in the University of Dublin. It was submitted to the Professors of the medical school, but it met with determined opposition from a majority of that body, so that for the present, at all events, it is completely shelved. This, however, will scarcely surprise anyone who is acquainted with the extraordinary proceedings which took place when the vivisection question was under discussion, and the ludicrous decision arrived at in that instance. In the former case, had the University adopted the proposal alluded to, it would have again shown an example of enlightened progress to the other Universities in this kingdom, as regards ophthalmology, but in the latter case it would merely have been carrying out the provisions of what has now become the law of the land.

But we are satisfied that it is merely a matter of time, for sooner or later the claims of ophthalmology to be placed on an independent basis must be recognised, and we fully expect to see the day when every well-educated physician and surgeon will be able to use the ophthalmoscope with the same ease and certainty as the stethoscope. Another factor which has largely contributed in retarding the progress of British ophthalmology ought also to be noticed—namely, the complete lack of any central or representative medium for the interchange of ideas or discussion on the subjects connected with this branch of medical science. The fact that the only special organ we have in this department—namely, *The Royal London Ophthalmic Hospital Reports*—has, after the lapse of two years! appeared in the form of Part 3 of Vol. IX., proves to demonstration the languishing condition of ophthalmic literature in this country. There is ample material, as regards members, for the formation of a British Ophthalmological Society, which should hold annual meetings like the German and American Societies. We believe that such a Society would go a long way towards reviving the British school, and placing it in a position of competing more fairly with its German and American rivals. The

inauguration of a sub-section of ophthalmology at the last meeting of the British Medical Association gives promise that this most important step may yet be accomplished.

Such are the chief causes which, in our opinion, retard the progress of ophthalmology in this country. Let us now proceed to examine some of the recent works which have been published in England on this subject.

The first work we have to notice is from the pen of Mr. Robert Brudenell Carter, Ophthalmic Surgeon to St. George's Hospital, and consists of a course of six lectures delivered at the Royal College of Surgeons in England, in 1877, and which were, as the preface informs us, "immediately afterwards published in *The Medical Times and Gazette*." This work is merely a reprint, with "a few verbal alterations," and was brought out at the close of the same year.

These lectures, on the whole, contain an accurate account of the various errors of refraction and accommodation; and though not setting forth anything very new or original, yet each subject is clearly treated, and the whole is presented in a very readable style. One or two points, however, we conceive are open to criticism, and these we shall indicate as briefly as possible.

In the first lecture, which deals with refraction, we find the following statement, which, if acted on literally, might frequently lead to very grave error. The author is supposing that we are examining a patient affected with some form of ametropia, by the ordinary method, with test types and lenses. He says: "Assuming that we are unacquainted with the form of his ametropia, we take a concave and a convex lens, each of one dioptric, and place them alternately before the eye under examination, the other eye being closed or covered. If the concave lens improves vision, there is myopia, &c."

Now this, we assert, by no means follows; and we venture to say there are very few, if any, ophthalmic surgeons who have not frequently met with cases in which the visual acuteness was brought up to the normal standard with a negative lens, and yet where there was in reality a considerable degree of hypermetropia, though latent. Were we merely to rely upon the test with lenses we should be often led into committing serious mistakes and increasing the evil from which our patients suffered. The singular thing is, that the author appears to be quite cognisant of the fact just mentioned, for in Lecture IV., p. 80, he says that we sometimes

find that the patient "declares distant vision to be improved by a weak concave lens;" and he then goes on to explain the reason of this. Yet, two pages afterwards, we find him repeating the statements we complain of in a more positive and dangerous manner, thus:—

"When a person is able to read small print easily and fluently in the hand, but has not the normal standard of vision for distant objects, we may at once infer that he is the subject of myopia; and, if his distant vision is improved by a concave glass, the inference may be accepted as a fact."

The sixth and last lecture is devoted to the subject of asthenopia, and in it the author both criticises and indulges in a sweeping denunciation of Von Graefe's theory of "insufficiency of the internal recti." But, we confess, his remarks lose much of their force when we find him admitting—"I have never seen any non-squinting asthenopic patient who seemed to me to require tenotomy of the externi; so that my knowledge of the operation is practically limited to cases in which it has been done without beneficial effect by some one else." The author gives expression to an ill-disguised sneer at the followers of Von Graefe, who, being "a man of commanding and fertile intellect," could "hardly fail at times to suggest hypotheses which will not bear the test of examination." Before, however, he had penned this passage, and one further on in which he says, "I assume, therefore, that insufficiency of the interni is a condition which has no real existence," it might have been well for him to have considered that Von Graefe founded both his theory and practice on a vast experience, as witnessed by the following passage from an important paper by Dr. H. D. Noyes, of New York, who, by-the-by, is not at all sceptical as to the existence of the condition of insufficiency of the recti interni. Dr. Noyes' paper^a was read at the meeting of the International Ophthalmological Congress at New York in 1876, and on the same occasion a similar paper^b was presented by Dr. Agnew of that city. In alluding to these papers Mr. Carter says: "I much doubt whether any two practitioners in any other capital in the world could have cited similar numbers." After such an admission Mr. Carter cannot deem us presumptuous if we prefer to abide by the experience of such authorities rather than his *assumptions*.

^a Analysis of 1,079 recorded cases of Ametropia and Muscular Weakness, with deductions respecting Asthenopia. (Report of the 5th Int. Ophthal. Congress. N. Y. 1877.)

^b A Preliminary Analysis of 1,060 Cases of Asthenopia. (Ib.)

The passage in Dr. Noyes' paper is as follows:—

“I pass to the consideration of insufficiency of the recti interni in myopia. On this topic the teachings of Graefe are classical; few of his precepts will not bear the test of experience. My own practice has led me to resort less freely to tenotomy than he sanctions, and to find greater help from prismatic concave glasses than he seemed to obtain. Of course my field of observation has been greatly inferior in extent to his, but one must abide by his own experience, and the difference of nationality and surroundings modifies clinical results.”

He by no means concludes with Mr. Carter that “the difficulties in the way of sustained convergence, whatever they may be, are certainly not due to ‘insufficiency of the interni,’ and cannot be rationally treated by tenotomy of the antagonists.” On the contrary, he thoroughly recognises the advantage and necessity of the operation in some cases. The results he has obtained would alone be sufficient refutation of all Mr. Carter's objections; “out of twenty-one patients, in one the result was unknown; of the remaining twenty, seventeen had entire relief, and three obtained partial relief.”

Though the operation is one which requires careful thought and a thorough mastery of the rules and details for its performance as laid down by Von Graefe, and is not by any means to be lightly undertaken, it is nevertheless unpardonable presumption for any one whose experience of it is “limited to cases in which it has been done without beneficial effect by some one else” either to criticise or condemn it.

With the exception of the points we have alluded to, Mr. Carter's lectures are, on the whole, useful and reliable.

According to the preface of the next work in our list, “the novel views” it sets forth ought to be pretty well known—that is to say, if frequent republication could accomplish it, for it would seem that this is the sixth time these views have been brought before the public. The volume before us is in a remarkable yellow cover, with a most misleading diagram stamped on it, representing the action of a concave lens on diverging rays. We presume it illustrates the effect of one of Dr. Dudgeon's double concave air lenses under water, but why such a startling figure should be put upon the outside of a work which is avowedly a popular treatise on the optical construction of the human eye, is to us an enigma.

This book appears to have been written with a twofold object—

1. To explain the nature and action of "air lenses." 2. To expound the author's theory of accommodation.

The sole use of air lenses would seem to be to enable persons to see under water. They may possibly prove of some service in diving operations, but to the general public they can be of little practical value.

Dr. Dudgeon's theory of accommodation is peculiar. He maintains that if we accommodate for a near point, the crystalline lens makes a slight rotation "on its vertical axis from without inwards." He explains "that this rotary motion is only possible on the supposition that the contraction of the ciliary muscle takes place on one side only in accommodation for near vision, whilst the muscle on the opposite side of the eye is in a state of relaxation," and he sees "no reason to doubt that contraction of the ciliary muscle may take place in one portion of the muscle at a time." Truly a theory can play wonderful pranks with faith.

Dr. Hughlings Jackson's "Remarks" are reprinted from *The Medical Press and Circular*, and, independently of their coming from such authority, are well worthy of notice.

These remarks are directed to show the importance of a routine and systematic examination of all cerebral cases with the ophthalmoscope.

"There is nothing," says Dr. Jackson, "in medical ophthalmology more important than the fact that a patient who has acute neuritis can read the smallest type, and may not know that his sight is in any way defective." Consequently, "extremely abnormal ophthalmological appearances may exist when sight is good." This, he tells us, he has been "urging for about fourteen years," as indeed he clearly proves by quotations from his former writings, and he demonstrates the truth of the above statement by references to the principal works on ophthalmology. On this he grounds the importance of the routine use of the ophthalmoscope in cerebral disease, and sums up as follows:—

"I thus urge the routine use of the ophthalmoscope on very good authority. Without it, optic neuritis may be overlooked in its early stage. Thus we miss an important help in diagnosis, and we begin treatment of pathological changes late. There is disease of the optic nerve to treat before the symptom, amaurosis, appears.

"Without this help we should, in the early stages, underrate the gravity of very many cases which end fatally.

“From a scientific point of view, the necessity of not overlooking a decided pathological condition is obvious. There it is of some importance, in a case of severe cerebral disease, to be able to tell the patient’s friends that sight may become impaired or be lost, for this prediction, when verified, will satisfy them that we have not misunderstood the nature of the case in its early stage.”

“I feel sure that the use of the ophthalmoscope would sometimes save us from the mistake of declaring the symptoms of a case to be of non-cerebral origin, because, superficially considered, they seem to refer to other organs than the brain. In all such cases the ophthalmoscope should be used, *whether the patient complains of defect of sight or not, and when he can read the smallest type.* Although the absence of optic neuritis would not negative the existence of coarse disease within the cranium, the presence of the neuritis (double) would, I think, render the existence of this kind of change *almost certain.*”

No more powerful argument could be adduced to show the necessity of every physician and surgeon having some knowledge of ophthalmology, than this timely little pamphlet of Dr. Jackson’s.

A Treatise on Hygiene and Public Health. Edited by ALBERT H. BUCK, M.D. Two Volumes. New York: William Wood & Co. London: Sampson, Low, Marston, Searle, and Rivington. 1879. 8vo. Volume I. Pp. 792. Volume II. Pp. 657.

FIRST NOTICE.

WHEN the translation of Von Ziemssen’s *Handbuch der speciellen Pathologie und Therapie* was undertaken some years ago by our Transatlantic brethren, it was considered advisable to omit the first volume of the series—that which relates to Public Health—chiefly because the subject was treated almost entirely from a German standpoint. The present treatise on private and public hygiene has, on the contrary, been written with special reference to the different climates, conditions of soil, habitations, modes of life, and laws of the United States, but is applicable *mutatis mutandis* to the present state of sanitary science, or State Medicine, in the United Kingdom. A blank in the magnificent series of the Cyclopædia of Practical Medicine has thus been supplied, and we are much mistaken if this American treatise does not speedily become a classical text-book on the subjects of which it treats.

It is impossible to maintain the same style in a work written by

no fewer than twenty-two contributors; nor must we, under such circumstances, expect that the same high order of merit shall characterise all parts of the treatise. The distribution of the subject-matter amongst so many authors has led also, in some instances, either to repetition or to the wide separation of kindred topics. Taken as a whole, however, the work reflects much credit on its editor and his distinguished fellow-labourers.

Volume I. is divided into two parts. The first treats of "Individual Hygiene," under the headings—Infant Hygiene, Food and Drink, Drinking Water and Public Water Supplies, Physical Exercise, and the Care of the Person. The second part treats of "Habitations," under the headings—Soil and Water, the Atmosphere, and General Principles of Hospital Construction.

Volume II. is also divided into two parts. Part I., on "Occupation," embraces the following topics:—Hygiene of Occupation, Hygiene of Camps, Hygiene of the Naval and Merchant Marine, Hygiene of Coal Mines, Hygiene of Metal Mines. Part II. is devoted to the consideration of "Public Health" under the headings—Infant Mortality, Vital Statistics, Adulteration of Food, Public Nuisances, Quarantine, Inland Quarantine, Smallpox and other Contagious Diseases, the Hygiene of Syphilis, Disinfectants, Village Sanitary Associations, and School Hygiene.

Such is the very unsystematic arrangement of the contents of the treatise.

One of the most characteristic features of the work has not yet been mentioned—the introduction, which is from the pen of one of the hardest workers and ablest writers in America, Dr. John S. Billings, Surgeon in the U. S. Army. In some interesting prefatory remarks Dr. Billings gives a sketch of the scope and utility of Hygiene and of some of the obstacles to its progress. Among many interesting points he shows that the total loss of life in the United States from causes well known to be preventable is certainly over 100,000 annually. Accepting the calculations either of Dr. Jarvis or of Dr. Farr on the pecuniary value of lives considered as productive or money-earning instruments, or as capitalised investments, it can be shown that the direct pecuniary loss to the United States, on account of preventable sickness and mortality, is certainly over 100,000,000 dollars a year, and this without taking into account expenditures incurred on account of sickness, &c., or the unusual losses due to great epidemics, both from waste of life and injury to commerce. We quote at length the following passage:—

“One of the best illustrations of the extent to which ignorance and carelessness nullify the utility of advances in knowledge of methods for the prevention of disease, is found in the fact that smallpox still appears as a local epidemic, and sometimes with great mortality. If anything is known in Preventive Medicine, it is that this loathsome disease may be easily and certainly prevented in almost every case, and that it should never appear on the death register; yet, to obtain such an universal and satisfactory vaccination and revaccination of each individual as will give this security, there is necessary the decided and persistent interference of Government to an extent which has not yet been provided in this country, except in a few limited localities.

“The possible financial results of this carelessness are shown by Dr. Lee in a computation of the cost of the smallpox in 1871-72 in the city of Philadelphia, which he makes to be 21,848,977·99 dollars, while the cost of preventing it is figured at less than 800,000·00 dollars. It is true that in his calculations indirect damages figure to an undue extent, and that in his estimate of cost of prevention he provides for but eighteen months; but if we take the pecuniary loss at 10,000,000 dollars only, the annual interest on which at 5 per cent. is 500,000 dollars, it is clear that an annual expenditure of 100,000 dollars for the purpose of preventing smallpox only would have been a very good investment for Philadelphia.”

Truly in the face of the *two* epidemics of smallpox which have ravaged the Irish metropolis within the past eight years we may apostrophise Dublin, and say—“*Nomine mutato de te fabula narratur.*”

Dr. Billings says that at the present time the most urgent need of sanitary science in the United States is *an uniform system of registration of the principal diseases*, and next to this—that which would be an essential part of it—a similar system of registration of births and deaths.

In the “Introduction” Dr. Billings also discusses the causes of disease and the jurisprudence of hygiene. From a sanitary point of view the causes of disease are conveniently classified by the author into:—(1.) Hereditary; (2.) Physical and Chemical; (3.) Organised or Vital; (4.) Mental or Emotional. Of these the first class includes principally the unavoidable causes of disease, and has reference chiefly to personal hygiene. The second class—*i.e.*, the physical and chemical causes, is fully discussed in the special sections of this work. No attempt is made to consider the fourth class, in which are included the mental and emotional causes of disease, because to do so would require a discussion of the whole field of psychology and psychiatry—a discussion which would be

foreign to the scope of the present work. The third class of causes—those which are known or supposed to be organised or vital in character, is the most important of all in public hygiene. To quote Dr. Billings—"Of the total sickness and mortality of the human race, a very large proportion is due to those diseases which may become epidemic, and these are of peculiar and special interest to the sanitarian, not only because of their frequency and the magnitude of their effects, but because it is believed that they are all more or less preventable, and because such prevention requires something more than individual action. The word 'epidemic,' as used here, means general, prevalent, affecting many people in a community, and, as applied to disease, it simply indicates its relative prevalence."

Dr. Billings further observes that the most important forms of this extensive group of epidemic diseases are those which are supposed to be due to specific causes, usually spoken of as "poisons," and which are classed by German writers as the *infective* (not, *infectious*) diseases. In many of these diseases the cause can reproduce itself without limit, thus presenting one of the characteristics of a living thing or organism; and in a few of them this living organism is known, forming the class of parasitic disease. We may divide the infective diseases into four classes—

- | | |
|------------------------|-----------------------------------|
| a. Parasitic Diseases. | c. Miasmatico-Contagium Diseases. |
| b. Contagium Diseases. | d. Miasmatic Diseases. |

That the cause of each of the three first classes is specific is inferred from the fact that the disease transmitted is always the same. There is no satisfactory evidence that any of these causes arise spontaneously; in every case the pre-existence of the specific poison or infective organism seems to be necessary.

In the majority of parasitic diseases we can recognise the causal organism apart from the diseases which it produces; and, in fact, as soon as we learn clearly the nature and life-habits of an organism causing disease and its mode of propagation, whether within or without the body, we look upon that disease as belonging to the parasitic group. Very probably some of the maladies now known only as members of the "contagium" or "miasmatico-contagium" series, will one day be transferred to the parasitic class, and this probability is expressed by what is known as the "germ theory."

Dr. Billings then gives an intelligible and succinct account of the present state of our knowledge respecting what may be termed

the "microcosm of disease." He concludes this branch of his subject with the apt remark that our hope of substantial scientific progress in knowledge of the causes of disease rests mainly on two methods as yet little used, namely, *on the registration of disease and on comparative experimental pathology.*

In the concluding portion of his Introduction, Dr. Billings discusses many questions connected with the "Jurisprudence of Hygiene." The following paragraph is, we think, well worth quoting at length:—

"The broad general principle upon which all modern sanitary legislation rests is that every member of the community is entitled to protection in regard to his health, just as he is in regard to his liberty and property, and that, on the other hand, his liberty and his control of his property are only guaranteed to him on the condition that they shall be so exercised as not to interfere with the similar rights of others, nor be injurious to the health of the community at large. Health, in this connexion, is not merely analogous to capital or property, but it is capital, the value of which may be, to a certain extent, expressed in coin, and its protection may be based upon the legal principles which relate to the protection of rights of property, although it rests also on other principles of State polity which concern the jural and moral relations of human life."—P. 35.

Dr. Billings points out that, in a large part of the United States, public hygiene is a matter of common law only, and may be summed up in the regulations relating to nuisances. His definition of a nuisance is a good one—"The use of one's own property in such a way as to injure the rights of another and to inflict damage, is the essence of nuisance."

In considering some of the means by which the State should endeavour to prevent or destroy those causes of disease which affect communities rather than isolated individuals, and which are, for the most part, beyond the reach of individual effort, the author deals with the question—"What should be the unit of area for Sanitary Administration?" He observes that the best authorities in America are generally agreed that the most practical units are the city and the county. He holds also (1) that the areas should be identical with those for the registration of vital statistics; (2) that, for purposes of supervision, there are great advantages in having the areas as nearly as possible conterminous with drainage areas—in other words, the boundaries should not be streams, but ridges, and this remark applies to all units of area for vital statistics; and (3) that the area should be large enough to occupy all the time of the

inspecting and executive sanitary forces. He very properly adds that the larger the area, the greater the ability to pay for the services of suitable men; and *trained intellect, combined with high character*, is an expensive article to provide, *although it is in this case certainly true economy to do so*. Moreover, the greater part of the work can be properly done only by men having a medical education, and these men should not be practitioners. We gain an inkling as to one of the causes of the collapse of sanitary organisation in Ireland, in the opinion expressed by Dr. Billings that "attempts to combine the functions of a health officer with those of a physician for the poor have been often made, but the result is unsatisfactory." At the same time, he thinks—and we agree with him—that the health officer should be a good diagnostician and pathologist. We are not, however, prepared to go so far as to say with the author that probably it would, in most cases, be best to merge the duties of coroner with those of a health officer.

The areas being defined, Dr. Billings next discusses the organisation, powers, and duties of the sanitary board, on which he would have the medical profession well represented. In addition to municipal or local boards, there should be a central supervising authority, the State Board of Health, having much the same relations to local boards that they have to individual householders. The functions of such a State Board may be summarised thus:—

- 1st. To promote the organisation of local and municipal boards.
- 2nd. To obtain medical and vital statistics.
- 3rd. To investigate the causes of undue sickness and mortality, as indicated by these statistics.
- 4th. The removal of these causes, acting as far as possible through the local sanitary authorities.
- 5th. The supervision of the hygiene of State institutions, such as prisons, insane asylums, workhouses, &c.
- 6th. The supervision of quarantine.

At the present time there are seventeen State Boards of Health in the United States, and on March 3, 1879, an Act was approved by Congress "to prevent the introduction of infectious or contagious diseases into the United States, and to establish a National Board of Health." Since June, 1879, a weekly bulletin has been issued by this Board, which is now in full working order. The Board consists of seven members appointed by the President of the United States, and of four officers told off from the Army Medical

Department, the Naval Medical Department, the Marine Hospital Service, and the Department of Justice respectively. Dr. Billings also foreshadows the establishment of some form of International Health Organisation, which shall serve for the collection and centralisation of information, and for its publication upon some uniform plan, and also to some extent for the prevention of epidemics.

The Introduction concludes with a valuable bibliographical list of works on Hygiene and State Medicine.

[*To be continued.*]

Manual of Skin Diseases. By MALCOLM MORRIS, Joint Lecturer on Dermatology at St. Mary's Medical School, &c. London: Smith, Elder, & Co. 1879.

SPECIAL treatises are becoming so numerous that it was not without a degree of suspicion that we took up this volume. Not but that we should welcome any concise and practical manual on the subject of dermatology, which, by its simplicity and brevity, might recommend itself to students as well as to the busy practitioner; for it must be confessed that there is no branch so generally neglected and so badly taught as that one which deals with the affections of our cutaneous envelope; yet the placing in a student's hands of an imperfect or incomplete book is beyond all things to be deplored. The tendency of most students is to read the smallest book on any given subject which will enable them to satisfy an examiner on a minimum of knowledge; and this remark applies more especially to those subjects on which examiners themselves are frequently not very clear, either in a practical or theoretical sense of the word, and which are embraced in the large field covered under the terms practical medicine or surgery. To dermatology, in many instances, might be added gynaecology, ophthalmology, and otology; though why students should be allowed to qualify in medicine and surgery, and yet remain grossly ignorant of uterine, cutaneous, ocular, and aural therapeutics, we are at a loss to conceive; and yet this is every day happening in a large percentage of those who enter on practice. It is, then, with a feeling of gratification that we regard any effort made to induce students to study something more of the affections of these important organs than they will find in the cursory notices taken of them in most of the text-books in medicine and surgery now read. Mr. Malcolm Morris's work has much to recommend it as a condensed summary and careful codification of

the rather too complicated divisions and subdivisions made of cutaneous diseases. So far as the English language is concerned, there can be very little doubt that *the text-book*, alike for students and practitioners, is the unrivalled work by the late lamented Tilbury Fox. After Erasmus Wilson, to no modern British dermatologist are we so much indebted for a clear insight into the pathology of skin affections—their differentiation, and sound rules for treatment in the different stages of the same disease, as well as the modifying influences of diathesis and heredity on all treatment—as to Tilbury Fox. This was as conspicuous in his clinical teaching as in his writings. Take, for example, his insistence on the insidious and lurking character of the syphilitic poison—modifying, altering the type, and influencing the treatment of almost every class of skin inflammation, laying special stress on the importance of looking behind the local lesion on all occasions for some constitutional cause or taint requiring detection and rectification, as the first step towards a successful local application. Take, again, the cautions he ever laid down, both clinically and in his work, on the necessity for avoiding an irritating and too stimulating a plan of treatment in all conditions of hyperæmia—to *soothe and rest the skin* was his motto; hence his advocacy of the various forms of baths, which he developed to such perfection at University College Hospital. It would be well that every practitioner would read those few clearly-written pages in his chapter on “Therapeutics,” in which he explains the object and the mode of action of local stimulating remedies as well as the proper period for their use. Once more, note his lucid description of the catarrhal process in eczema, with its essential discharge, his advocacy of Willan’s view, and of the division of eczema into stages, each indicative of the treatment to be pursued, as also the dependence of the affection itself on a “perverted innervation” (Hebra), and its modification by constitutional tendencies. With him a man should be a sound physician first and a dermatologist after. “The dermatologist must comprehend the nature of diseases in general before he can treat eczema successfully.” What applies to eczema is likewise true of other skin inflammations. The mischief of the cutting up of medicine and surgery into the modern subdivisions, and the special danger of all our *scopes* and *ologies* is to be found in the concentration of attention and treatment on a local lesion, and the ignoring of some primary evil to which it owes its origin.

The first two chapters of his book Mr. Morris devotes to anatomy,

and physiology, and morbid anatomy; the third to classification. Following Erasmus Wilson he divides cutaneous diseases into two great classes—viz., (a) those of the skin proper; (b) those of the appendages of the skin. Subdividing these pathologically, under the heads of—Class I.—Exudations; II. Vascular; III. Neuroses; IV. Hypertrophies; V. Atrophies; VI. Neoplasmata (benign and malignant). Class II.—Affections of the—I. Sebaceous Glands; II. Sweat Glands; III. Hair; IV. Nails; and Parasitic Affections, animal and vegetable.

Under the head of Exudations induced by Infection or Contagion he devotes thirty-five pages to the consideration of Scarlatina, Morbilli, Rötheln, Variola, Varicella and Vaccinia, Typhus, Enteric Fever, Diphtheria. And here we must confess we see a weak point in this in many respects admirable work. There are certainly some useful tables for students for the diagnosis of the exanthemata, but it is manifestly absurd to crush into a small space all these affections, any one of which would require that allotted to the entire tribe. As a necessity there is little beyond the most meagre description of these diseases. The treatment of scarlatina is thus disposed of in a few lines, not a word being said of the throat complication, its special danger or management. So also of variola; under the head of treatment we find—"This consists in putting the patient on a suitable diet, placing him in a well-ventilated room, attending to his bowels, seeing that he gets sufficient sleep, and, when necessary, administering stimulants." These remarks, it would strike us, would apply to the management of a vast number of diseases—as the direction in scarlatina "to place the patient under circumstances the most favourable for recovery." The value of early attention to the frequently fatal throat complications in variola, the special danger to the eye and the means of averting it, the importance of the free use of antiseptics both externally and internally, we find no allusion to. The soothing effects of Erasmus Wilson's lotion, and the value of the free use of carbolic oil to the surface, in protecting the skin and modifying the pustulation, have been frequently proved to us during a severe epidemic. In a confluent case occurring not long since, a coating of vaselin, carbolic acid, and oleate of zinc, laid on as a thick cream, appeared to have the best effects. The brief description of the fevers, typhus and typhoid, and of diphtheria, so far as the summary of the symptoms and the rules for diagnosis are concerned, is correct and clear. Yet one cannot but help thinking it were better omitted than that the special periods of

danger—the warnings of fatal complications—the means of averting or controlling the latter, should be passed over in silence. The management of typhus fever is disposed of in a single line, and that given of all three affections would not occupy half a page. The author is forced to summarise into the smallest conceivable space the symptomatology and morbid anatomy of the diseases, and to pass over in silence the main indications for treatment, and the rules for the guidance of a case or the administration of remedies. This all through would appear to be the weak point of Mr. Morris's treatise. We hope that in future editions more consideration will be given to treatment, and, what to students and practitioners (for whom the book is intended) must be of special importance, some formulæ for special remedies introduced. Mr. Morris was struck under a good master in Mr. Jonathan Hutchinson, and we are not surprised to find the distinguished teacher constantly quoted in the work of the pupil. There is an admirable chapter on Syphilis, yet we must confess to a feeling of disappointment that this potent cause of skin disease does not receive a larger share of consideration. Mr. Hutchinson's views are adhered to, of the stages of this, as he considers it, exanthematic affection. The lurking character of the syphilitic poison, lying latent in the system, modifying other diseases, ever ready to become manifest under depressing circumstances or some unusual constitutional drain, is not sufficiently kept in view in the advice given to syphilitic patients. To no one are we more indebted than to Mr. Hutchinson for the means of recognising the signs of a syphilitic taint or tendency, whether hereditary or acquired. Of special importance are these tests in the recognition of incipient and insidious changes in the organs of the senses occurring in infancy and early life. Sight and hearing might more frequently be saved were they kept in remembrance. "Syphilis," says Wecker, in his recent lectures on "Ocular Therapeutics," "is the cause of from sixty to seventy per cent. of all cases of iritis." While the cornea is the part which suffers most from hereditary, the iris bears the brunt of the acquired taint. How often is vision lost from the non-recognition of this simple fact. Not long since we saw a case in which undoubtedly syphilitic induration and ulceration preceded an epitheliomatous invasion of the tongue. The typical and troublesome changes in this organ produced by the syphilitic attack are not dwelt on sufficiently by Mr. Morris. He is content with giving us a few diagnostic marks as between syphilis and cancer, whereas syphilis in the tongue is frequently

one of the most vexatious and obstinate of the secondary symptoms, and which in our experience nothing will relieve more than change of air and a course of anti-syphilitic baths, such as those of Aix-la-Chapelle, Aix-les-Bains, &c.

Referring to the bullous form of infantile pemphigus, occurring in infants, Mr. Morris says:—"The name pemphigus neonatorum was applied to this form of the disease before its nature was understood, but it is more correct to call it pemphigus syphiliticus." Fox, in his work, states that "acute pemphigus is seen in children, and is practically synonymous with pemphigus neonatorum," adding that "the greatest doubt exists as to the nature of this affection." He quotes Steffen, showing that there are three forms of the disease—(1) occurring in healthy children, (2) occurring in badly nourished children, (3) syphilitic. Further on he says that, summarising all the evidence, "it seems clear to me that there is a non-syphilitic and a syphilitic form." It could hardly be possible that the affection described so clearly by Whitley Stokes was anything more than an epidemic form, dependent on defective hygienic surroundings. Anyone reading Sir Dominic Corrigan's article in the "Cyclopædia of Practical Medicine" on "Gangrenous Pemphigus," will be convinced of this. Some years since an infant was brought to us in whom the disease set in about three weeks after birth. The parents were in struggling circumstances; the other children were all healthy; there had been no miscarriages; bullæ had appeared here and there; these rapidly assumed in parts a dark colour, and when they burst left a foul ulcerating surface, having a disagreeable smell, much as if the child had been burnt, and an unhealthy ulcer had followed. The feet had several of these ulcers on them; one large gangrenous sore, extending in spite of all treatment, eat into the buttock, laying bare the gluteal muscle, and finally reaching the bone; a circle of ulceration attacked the thigh, and at last amputated everything down to the bone, and in this condition—when all the soft parts had been divided, and the child presented a horrible appearance—death occurred. There was not the slightest proof that any syphilitic taint lurked in either parent. On the other hand we have seen the syphilitic variety accompanying the other marks of hereditary taint in the infant. Of all the methods of administering mercury enumerated by Mr. Morris we prefer that by inunction, and, in the secondary troubles, either the bichloride or bicyanide; this latter form we first used on the recommendation of Dr. Tilbury Fox, and, after considerable experience, can speak highly of its efficacy.

It is best given combined with quinine; it requires to be carefully subdivided, and may be used in doses of $\frac{1}{12}$ to $\frac{1}{8}$ of a grain. We see no mention made of the use of iodoform either externally or internally in the treatment of syphilis, though in it we have one of the most valuable remedies recently added to our stock of specifics. Iodide of starch, also, for cleansing foul ecthymatous sores and dressing the surface after the separation of scabs, is highly useful. An interesting case has recently been under our care, where syphilis, contracted years before by a previous marriage—which had resulted in some miscarriages—reappeared in a rupial form. The woman had healthy children by the second husband, and never suffered in the least, until about one year since, when her health began to fail, and she came to hospital with rupial sores—on the palm of the hand, the temple, and a deep rupial ulcer which eat into Steno's duct, causing a salivary fistula. She was given large doses of iodide of potassium. The sores were treated with iodoform and iodide of starch application. The woman has recovered without operation.

Under the head of Erythemata, Mr. Morris places the various forms of erythema, roseola, urticaria, pellagra. There is nothing new in the brief description of these affections. Here, as throughout the entire work, the notice bestowed on treatment is altogether insufficient. The use of baths as a means of combating and soothing skin irritation is hardly referred to all through the work. Take urticaria, for example—"Saline baths," the author tells us, "are useless." This does not accord with our experience of the employment of alkaline and starch baths, or vapour baths, followed by thorough inunction of the itching parts. "I find," Fox says, "urticaria one of the most difficult and unsatisfactory of all diseases to cure;" and he is most explicit in the directions he gives for its treatment, both local and constitutional, in the acute and chronic stages. In the work before us it is dismissed in a few lines of ordinary directions.

Mr. Morris follows Willan, including lichen and prurigo under the head of papulæ. The *infantile* and *relapsing* forms of the latter affection described by Hutchinson are noticed. He speaks highly of the value of tar baths in the prurigo of infants—the child to be kept for half-an-hour in the bath, "and, in the interval, well anointed with a soothing ointment."

There is a short chapter devoted to the consideration of the vesicular and bulbous group of exudations—herpes, hydroa, pem-

phigus. In the description of the symptoms of hydroa we find no notice of the irritation caused by some varieties of this affection. Shortly before his death Fox drew attention to the similarity between acne cachecticorum and pruriginous hydroa, pointing out the essentially pruritic nature of the latter affection.

In the chapter on Eczema there is a useful table for students for differentiating eczema, seborrhœa, psoriasis, vesico-pustular syphilide, tinea tonsurans, and favus. Whatever view, as regards the etiology of eczema, a practitioner may hold, he only can, we believe, treat the various forms under which it presents itself in the different parts of the body successfully who views it in the light of an inflammatory state, primarily catarrhal, helped out during periods of unusual debility, and consequent upon some general vitiating tendency in the system. So we hear of strumous eczema in subjects of lymphatic temperament—syphilitic and gouty eczema; other forms we recognise as stages of the affection, each stage having a proneness to assume a vesicular, squamous, pustular, or erythematous type. For a student, in diagnosis, we believe the best idea he can have of eczema, as distinct from other cutaneous inflammations, is comprised in the words "moisture and crust." "*Eczema of the eyelashes, or tinea tarsi,*" Mr. Morris points out, is "*confounded with inflammation of the meibomian glands.*" But surely it is not right that a student should imagine that eczema and a purely parasitical affection are one and the same thing. The very term *tinea* involves the idea of invasion of the affected part by a parasite. It is not correct to employ it in regard to a simple inflammatory state. When the hair follicles are invaded by a vegetable parasite, producing brittleness and stunted growth of the lashes, and a furfuraceous mass, perfectly dry, lines the margin of the eyelid, the appearances are different from those usually resulting from blepharitis and an altered state of the meibomian glands. Wecker distinguishes *simple blepharitis* (*E. furfuraceum*, *E. rubrum*), hypertrophic eczema, ulcerative blepharitis (*E. sycomatosum*), as the different forms of eczema attacking the eyelids. Whereas perfect cleanliness, attention to the general health, and hygienic surroundings, paring of the eyelashes, and the use of mild, stimulating applications, will generally cure these conditions, epilation and more powerful applications, as parasitocides, may be required for tinea. In our experience, to carefully pare the eyelashes to the margin of the lid should be the first step in the treatment in any obstinate case of blepharitis or tinea. It is the neglect of

this simple precaution, and of stringent attention to cleanliness, that converts the acute into a chronic affection.

Eczema of the auricle would have demanded more than a paragraph of two lines. Constantly it leads to catarrhal states of the tympanum, thickening and blocking up of the meatus with epithelium and pus; and if of the furfuraceous variety, contraction of the external passage, which becomes filled with dry scales and cerumen, leading to deafness. At times we meet a most troublesome subacute variety of the outer ear, attended by cracks and fissures, an ichorous discharge, and followed by destruction of part of the lobule. Merely "brushing out the meatus cautiously with a potash solution" will not answer. The meatus must be thoroughly cleaned of all *debris* by suitable syringing; cotton wool rolled on the aural probe should be used to free it of its contents; warm alkaline washes and mild disinfectants employed; applications of carbolic acid and glycerin nitrate of silver solution, or a mixture of alcohol and glycerin, made to the walls of the canal. In the chronic form attacking the auricle the thin crusts must be separated, and the bleeding surface dried, and then touched with carbolic acid or nitrate of silver, or chloride of zinc solution—oleate of zinc and vaselin being freely applied at night. We cannot agree with the opinion of Mr. Morris that gout and syphilis, mental emotion, &c., have no influence in the origin of psoriasis, and, though it is doubtless at times hereditary, it has happened to us frequently to see psoriasis attacking one member only of a family. Not long since we had under our care a most troublesome case of palmar psoriasis in a lady, which never got completely well, though much relieved by treatment (including a mild mercurial course), and where there was no proof of any syphilitic history. Yet Fox and Newman, and others, regard such a variety as extremely rare. Quite recently we had a well-marked case of psoriasis, the result of syphilis, and have several times seen it with other signs of a gouty diathesis. The value of oil packing with an oiled rag, covered with oiled silk or guttapercha tissue, previous to the application of local remedies, especially where water dressing does mischief, is not sufficiently understood in practice. Frequently it has been our lot to see the irritation produced by tarry preparations or chrysophanic acid do much mischief in the inflammatory stage of psoriasis—when these preparations were well borne—after packing with oil had been resorted to for some time. The idiosyncrasy in some individuals which contra-indicates the use of arsenic in cutaneous affections should be remembered, though

we do not find it alluded to in this work. Small doses of three drops of liquor arsenicalis were given to a lady suffering from a psoriasis of the feet. She did not know that she was taking the medicine. Shortly after we were sent for in great alarm to know if arsenic were in the prescription. She had been ordered, on a previous occasion, by another, very small doses of the drug, and it had caused some alarming symptoms suddenly. There was great depression of spirits, inability to breathe, feeling of tightness in the chest, followed by a "bursting" sensation in the head, and general distress. All disappeared in a few days on relinquishing the use of the medicine. A year or so subsequently we gave this patient's daughter, a young lady of about five-and-twenty, suffering from anæmia with amenorrhœa and leucorrhœa, pills containing 1-40th of a grain of arsenious acid with some dried sulphate of iron; one of these she was to take three times daily after meals. We were hurriedly summoned to see her, and found that she had taken alarm about arsenic, as she also had been given it before by another physician for a skin affection, and it had produced the same symptoms. In her instance there was a swelling of the parotid and submaxillary glands, tenderness on pressure, rapid pulse, strange sensation as if her feet were higher than her head, as she lay in bed, headache, and difficulty of breathing. All disappeared in a few days. Strange to say, her mother informed me that the girl's uncle was also unable to take the smallest quantity of arsenic without its producing bad effects.

There is a short but well-written chapter on Ulcers, by Mr. Edmund Owen, in which he speaks as highly of Martin's rubber bandages as they deserve to be spoken of. There is only one point about these bandages which it is necessary to insist on, and that is, that the rubber be pure. There should be no patches visible when the bandage is held up to the light and stretched. It should be almost translucent. Its proper application any patient can learn. With few exceptions in our hands they have answered all the expectations we had of them from the first, after Dr. Martin's advocacy. Chapter XVI. is devoted to the consideration of zoster, cheiro-pompholyx, pruritus, dystrophia cutis. As regards the treatment of herpes zoster, we have invariably found that painting the vesicles with a solution of nitrate of silver, 40 grains to the ounce, both relieves the feeling of heat and smarting, and also causes an early withering of the eruption; it is applied freely to the skin with a brush, and followed, after a few applications, with an oil pack and the use of zinc cream. For the neuralgia the constant current

(Leclanché's, 15-20 cells), as recommended by Mr. Morris, is certainly the most efficacious. Mr. Morris gives the credit of the original description of Cheiro-pompholyx to Mr. Hutchinson (bracketing his name in connexion with it). Everyone is aware of the difference of opinion between Dr. Tilbury Fox and Mr. Jonathan Hutchinson as to the etiology of the disease called by the former "dysidrosis," and by the latter "cheiro-pompholyx." Fox gives the most complete description of the affection in his work, published in 1873, and in the letterpress of his Atlas states that for several years previously, though not published, the description of the disease was given at his clinique in University College Hospital. It furnished one of the plates in his Atlas, published in 1877. Nothing can be more complete than his description of the course and symptoms of the affection, and his view never changed that it commenced in the sweat glands, and that the alkalinity of the fluid subsequently found in the vesicles was due to secondary changes consequent on the inflammatory process. We find no mention by Mr. Morris of Dr. Fox's account of dysidrosis, nor even an allusion to his claim to the recognition of the disease, and the publication of its cause, course, and symptoms "for the first time." This, we consider, would have been only fair.

There is a capitally condensed chapter on lupus, embracing the various methods of treatment by caustics, Squire's linear scarification, Volkmann's spoon, cautery, &c. The recent additions made by Dr. Thin to our knowledge of the morbid anatomy of lupus are referred to, as also the writings of Kaposi. The communications made last year by Dr. T. Calcott Fox, before the Pathological Society, and the microscopical preparations exhibited, would appear to settle the question as to this identity of rodent ulcer and epithelioma. The chapter on animal and vegetable parasites, including a brief but excellent account of pediculosis, scabies, the various forms of tinea, concludes the work. Having carefully perused its pages, we closed it with a feeling of regret that the author had set for himself so difficult a task as that of writing a manual of dermatology in the compass of 280 short pages. There is, however, an admirable foundation on which to build a more permanent superstructure. In future editions we may have more enlarged views on the indications for, and the different modes of, treatment. This could be done without departing from the design of the work. The condensed descriptions of the morbid anatomy leave nothing to be desired. On the entire, as a book for the

busy practitioner to read, or as a handy treatise for students, we can conscientiously recommend Mr. Morris's manual as giving in the shortest possible space a large amount of useful and practical information.

H. MACNAUGHTON JONES.

Health Primers.

UNDER this title Messrs. Hardwicke and Bogue, of Piccadilly, London, have issued a series of little books, price one shilling each. The subjects are—1. Premature Death—its Promotion and Prevention; 2. Alcohol—its Use and Abuse; 3. Personal Appearance in Health and Disease; 4. Exercise and Training; 5. The House and its Surroundings; 6. The Skin and its Troubles; 7. Baths and Bathing; 8. The Heart and its Functions.

Amongst the authors we find such well-known names as Drs. G. W. Balfour, Tilbury Fox, J. Netten-Radcliffe, J. Crichton-Brown, &c. The little books are printed in large clear type, on good paper, and neatly bound. The subject-matter is written in clear, simple language, intelligible to non-medical persons. We trust that they may prove useful in diffusing amongst the reading classes a knowledge of the laws of life and health.

The Chemistry of Common Life. By the late PROFESSOR J. W. F. JOHNSTON, F.R.S. New Edition, by ARTHUR H. CHURCH, A.M., Oxon. Edinburgh and London: W. Blackwood & Sons. 1879. 8vo. Pp. 592.

No British author in the department of popular science ever attained to a greater degree of popularity than the late Professor Johnston, of Durham. The remarkably clear style, the simplicity of language, the elegance of diction, and the intrinsic value of the subject-matter, account for the great circulation which his works attained to in this and other countries. It is a long time since the "Chemistry of Common Life" was first published, and our knowledge of the subjects of which it treated has of late years been much enlarged; Messrs. Blackwood have, therefore, done wisely in causing a revision of so popular a book. They have been equally judicious in selecting for its editor Professor Church. He has acquitted himself of the editorial duties so well that the work, whilst retaining the happy style and method of its author, has

been made an entirely new book by the editor. It has also been enlarged, as was, of course, necessary to give proper space for the facts discovered since it was first published, six-and-twenty years ago.

Air, water, soil, the plant, bread, beef, beverages, sweets, liquors, narcotics, poisons, odours, smells, colours, respiration, digestion, the body, and circulation of matter, are the headings under which are discussed, in very entertaining style, an immense variety of subjects of interest nearly to everyone. This is a book which the medical student and the medical man might read, not only with pleasure but with profit. Although professedly a popular science book, it is free from those inaccuracies and baseless assertions which are so commonly met with in works of that class.

The Story of Our Services under the Crown; an Historical Sketch of the Army Medical Staff. By SURGEON-MAJOR ALBERT A. GORE. London: Baillière, Tindall, & Cox. 1879. Pp. 194.

SURGEON-MAJOR GORE's "Story" is, unfortunately for the reader, a particularly dry one. But, as a history of the medical staff of the army, it is a work of great labour, and does credit to the author for his perseverance in its compilation.

Commencing with a reference to the army surgeons mentioned by Homer as having been present at the siege of Troy (B.C. 1192), Dr. Gore traces from that remote period the history of the arrangements made for the attendance on the sick and wounded in war by different nations, and by our own military authorities, up to the date of the opening of the Army Medical School at Chatham, in 1860. As a work of reference, then, it will be found extremely useful; but there is an absence of all system, and no order in its arrangement, and no index. Probably these great faults may be partly accounted for by the appearance of the book, in the first instance, in the columns of a magazine, without the proofs receiving that thorough revision before publication which the author, in consequence of the exigencies of the service, was unable at the time to give them. A chronological arrangement, though only marginally noted, would have made the record far more useful, and shown more clearly the gradual progression of the sanitary history of the soldier.

The appendix to the work is a *précis* of the Report of the Committee on the Army Medical Services. Their excellent

recommendations are at last, we are glad to see, embodied in a warrant, and are now the Rules and Regulations for the Army Medical Department. We are sorry that the authorities did not deem it advisable to restore, in some form, the good old system of Regimentalism; and in connexion with this point we quote some very important remarks made by Lord Wellington in one of his earlier despatches from the Peninsula:—"The duty of the general hospitals in every active army ought to be done by the general medical staff, and the regiments ought to have their surgeons and assistants entirely disengaged for any extraordinary event in sickness that may occur. We have not now one surgeon or assistant with each regiment, instead of three, the others being employed in the hospitals instead of the hospital-mates, and we have always been equally deficient. Indeed, one of the reasons which induced me to cross the Tagus, on 4th August, instead of attacking Soult, was the want of surgeons with the army, all being employed with the hospitals, and there being scarcely one for each brigade; and if we had had an action we would not have been able to dress our wounded." (Page 157.)

The value of Surgeon-Major Gore's "Story" would be greatly enhanced if the defects we have pointed out were corrected. We hope, therefore, speedily to see a second edition of the work, and recommend it to the perusal of those who have always earned and deserved the motto—"Semper et ubique fidelis."

The Irish Medical Directory for the year 1880. Dublin: Offices of *The Medical Press and Circular.* London: Baillière, Tindall, and Cox. 8vo. Pp. 648.

WE are glad to notice the comparatively early date at which this useful publication has been issued in the present year. We received a copy on January 12. This punctuality will benefit both the subscribers and the zealous and indefatigable editor.

The work has again been enlarged. It contains the new Royal Warrant of the Army Medical Department, and the principal Acts passed last session which touch on medical matters—viz., the "Dispensary Houses (Ireland) Act," (42 & 43 Vict., cap. 25); the "Habitual Drunkards Act," (42 & 43 Vict., cap. 19); the "Sale of Food and Drugs Act Amendment Act," (42 & 43 Vict., cap. 30); the "Vaccination Amendment (Ireland) Act," (42 & 43 Vict., cap. 70). It also contains the Order of the Local Government

Board for Ireland to Sanitary Authorities, under the Public Health Act of 1878.

At page 366 there is a curious error. The three newly-elected Fellows of the King and Queen's College of Physicians are put down as the additional Examiners under the provisions of the Supplemental Charter. With this exception the work is replete with useful and accurate information.

The Treatment of Epithelioma of the Cervix Uteri. By MARION SIMS, M.D. Reprinted from *The American Journal of Obstetrics and Diseases of Women and Children*. Vol. XII., No. III. New York: William Wood & Co. 1879.

THE name of Marion Sims is in itself a strong recommendation to a treatise on any subject connected with gynæcology, but especially is he worth hearing on the subject of operative treatment. Dr. Sims is eminently a practical man, and this is shown in his writings, especially by the minute and careful manner in which he deals with and dwells upon matters of detail—such, for example, as the preparation of tampons, their introduction and removal, the number of sponges, the form of speculum, the knife, the scissors. The pamphlet before us is remarkable in this respect—almost every paragraph contains some practical suggestion. It does not profess to be exhaustive, but is rather a record of the author's personal experience, and, accordingly, some modes of treatment are altogether omitted which we might have expected to find, and others—such as Professor Schroeder's method of removing the entire cervix, and Professor Freund's operation for extirpating the whole uterus—are merely mentioned without further comment than that he had no experience of them.

In the year 1876 Dr. Sims read a paper before the Obstetrical section of the British Medical Association on what he termed "my plan of operating for epithelioma of the cervix." As might have been anticipated that operation occupies a prominent position in the present work, and it is urged upon us now, after the test of time has tried it, with even more enthusiasm than at first.

The success of all operations for cancer depends upon the thoroughness with which they are executed. Dr. Sims, therefore, rejects amputation of the cervix either by the ecraseur or electro-cautery, as this simply removes the infra-vaginal portion of the disease, leaving the radicals of the cancer deeply implanted in the cervix,

from which it readily shoots up again. He was formerly in the habit of extirpating the cervix and then closing the conically-excavated cavity with wire sutures. However, the result was anything but satisfactory.

Whilst agreeing with Maisonneuve that caustics are, as a rule, more efficient than the knife for the extirpation of cancer, he prefers in the first place exsecting the whole diseased structure, and afterwards cauterising the denuded surface. The thoroughness with which he carries out both these methods is well illustrated by the case of Magdalena Czermack, from whom he removed the greater part of the uterus, leaving in some places only the peritoneal covering. This patient died, but in most of the cases published the results must be considered satisfactory. A cure is rarely possible; still, in some cases, the disease was kept at bay (so to speak) for years, and even in desperate cases, "where the pain and the foetid discharge, conjoined with sleepless nights, were rapidly exhausting the vital powers, these were all arrested for a time, and life was somewhat prolonged and rendered more comfortable."

The caustic which Dr. Sims prefers is the chloride of zinc. "Bromine," he says, "is as painful and as efficient, but not more so. But as it affected my eyes and nose painfully I returned again to the zinc."

The pamphlet is well worth reading, but it is disfigured by some badly-executed woodcuts, which give a very exaggerated idea of the extent of the operation. For example, referring to Fig. 3, page 9, Dr. Sims says:—"I cut as far up the cervix as I could find any diseased structure to remove, which was quite up to the os internum, as shown by the dotted line *b*." Now, this dotted line *b* enters the uterine cavity at a point situated half an inch from the fundus and one inch from the attachment of the vagina to the cervix; if another half-inch be added for the vaginal portion of the cervix, removed in a previous operation, then the cervical cavity is represented as three times as long as the uterine. Fig. 7, page 18, is even more absurd. Here the distance from os externum to os internum is five times as great as from the latter to the fundus.

THE SOCIETY FOR
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PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By WILLIAM THOMSON, A.B., M.D., F.R.C.S.; Surgeon to the Richmond, Whitworth, and Hardwicke Hospitals; and Member of the Surgical Court of Examiners, Royal College of Surgeons.

EXCISION OF BOTH HIP-JOINTS.

AT the Clinical Society of London (*Brit. Med. Jour.*, Dec. 20, 1879), Mr. J. Croft read a paper in which he gave details of a case of excision of both hip-joints in a child aged four years. Disease had existed for two years, and there was marked contraction of both limbs, with abscesses. The left joint was excised antiseptically on the 17th May, and the right was similarly treated in three weeks afterwards. The wounds healed in a few weeks. The epiphysis was found separated at the epiphysal line from the neck of the bone. On the left side its upper surface was for the most part bare, and small pieces of dead bone were adhering to it, and its under-surface was irregular where it had separated from the epiphysal cartilage. The trochanteric epiphysis was left attached to its muscles. Mr. Croft urged the value of operating early before the third stage had advanced; the value of operating antiseptically; the value of removing the parts freely; the value of leaving the great trochanter attached to the muscles which were fixed to it. Mr. J. Hutchinson remarked that in his experience separation of the epiphysis had been seen in only four or five cases. Mr. Marsh said that out of some 120 cases of excision at the Children's and St. Bartholomew's Hospital he could only point to six or seven entirely good results.

CHOLECYSTOTOMY.

Mr. Lawson Tait (*Brit. Med. Jour.*, Nov. 15, 1879) reports a successful case of this operation. It was first suggested by Dr. Handfield Jones in cases of threatened death from impacted gall-stone; and the operation was first performed by Marion Sims, but unsuccessfully (*Dublin Journ. of Medical Science*, July, 1878, p. 35).

Mr. Tait's patient had been married eighteen years, had borne six children, and menstruation was normal and health good till the summer of 1878. At that time she had spasmodic pains in the right side, aggravated by walking and lifting slight weights. A swelling, noticed in September, slowly increased; and during last winter pain became more intense and she presented a cachectic appearance, suffering from incessant headache, sickness, and obstinate constipation. The seat of pain was over the right kidney, where there was a heart-shaped tumour, firm and elastic without fluctuation, tender to the touch, and movable to each side. The urine gave only negative results. After consultation with Dr. Edgington on August 23rd, the abdomen was opened in the middle line to the extent of four inches. The tumour was found to be a distended gall-bladder containing a white starchy-looking fluid and two large gall-stones, one lying loose, and the other impacted in the entrance of the duct, and adherent to the mucous surface. The latter was removed by being carefully broken up. The stone and fragments weighed 6·11 *grammes* (94·3 grains). The wound in the gall-bladder was stitched to the upper end of the wound in the abdominal walls by continuous sutures; the aperture into the bladder was left open, and the rest of the abdominal opening was closed in the usual way. The operation was performed antiseptically under ether. The patient rallied completely in a few hours, and the dressings of the wound were found stained with healthy bile. The flow of bile from the wound continued till September 3rd. The wound was completely healed on September 9th, when the patient began to take solid food, the diet having up to that time been restricted to milk and beef-tea. On the 30th she went home quite restored to health. A temperature-chart indicated the evenness and the rapidity of the recovery. An entire absence of symptoms of gall-stone rendered an accurate diagnosis impossible, but this was of less importance, as the improvements in abdominal surgery made an early exploratory incision for ascertaining the true nature of the disease feasible.

THE TREATMENT OF BURNS AND ULCERS.

Mr. J. Duncan (*Brit. Med. Jour.*, Oct. 18, 1879) draws attention to the healing of burns and ulcers by the union of granulations. In a case of extensive burn he adopted the following plan:—

“ Having washed the sore carefully with boracic lotion, I operated under the spray, because, after the parts are drawn together, the

wound ceases to be a superficial ulcer. I then entered the needle two inches from the sore, and brought it out at the margin, entered it again at the opposite margin, and brought it out two inches off. When the sutures had been drawn tight upon the buttons (of the largest size), the sore, originally three inches in diameter, was reduced to a line three inches long. It was then dressed with carbolised gauze. The dressings were changed on the fourth day, and, on the ninth, I removed the buttons, the sore being healed with the exception of little marks where the silver wire passing from the buttons had slightly cut the skin.

“Encouraged by this success, I now attacked the second sore, which is situated on the shoulder. It was two inches and a half in diameter, besides new cicatrix about half an inch wide. One or two lessons were taught us by this operation. I folded up the wound with my finger and thumb, and then passed a suture deeply under it, and drew it tightly over two large buttons. On removing the manual pressure, it was at once evident to you that this method was not nearly so effectual as the one previously described, in which the skin only on each side was involved in the suture. The folded-up sides of the sore, instead of lying in contact, formed a deep hollow—assumed a V-shape. To remedy this, I passed sutures above and below by the former method, and so succeeded in bringing about exact apposition. Thinking that by the first suture the tension must have been greatly relaxed, I used very small buttons for the upper one.

“It has not been found necessary to change the dressing till now, the seventh day after the operation, and you see the result. The upper suture has cut itself out and is lying quite loose. The part of the wound where it was inserted has diminished in breadth by half an inch, but the line which the wire has cut has been added to it. Where the lowest large buttons were applied, the burn is healed, and opposite the central deep suture it is reduced to half an inch in breadth. We have therefore gained much ground, but not nearly so much as in the former remarkably successful operation, and, I think, entirely because the manner of performance was less efficient. I have treated in the same way, and with perfect success, two other ulcers of smaller size than these, one of a syphilitic character on the forearm, the other a strumous sore on the neck.

“It is evident that a method which shortens the healing of a wound by weeks, as in the case you have before you, is of the greatest possible value, and I believe that it may also present

other advantages—in burns, for example, it may sometimes be used to prevent contraction by approximating the margins in a direction which will not be injurious. The mere diminution in the amount of cicatrix is in itself a benefit.”

THE TREATMENT OF GOÎTRE.

In *Langenbeck's Archiv* (Band 24, Heft 1), Dr. Wölfler, in speaking of the treatment of goître with subcutaneous injections of iodine, says that favourable results have been obtained both in cases of simple hyperplasia, and of colloid degeneration. He illustrates his statement by a few cases from Billroth's clinic, and an experiment on a dog made by himself. The lobes of the thyroid gland of the dog had respectively attained the size of a goose's egg, and the author made ten injections of iodine into one of the lobes. The dog was killed at the end of a month, when the portion of the goître into which the injections had been made was found to have dwindled down to the size of a man's thumb; it consisted of connective tissue which no longer contained any colloid liquid. The peripheric part of the injected goître presented the same appearance as the lobe which had remained untouched; it consisted of large meshes of connective tissue, which contained colloid fluid. There were no traces of inflammation or hæmorrhage following the injection of iodine. Several strumous cysts were treated in a different manner; one cyst with thin walls was absorbed after injections of iodine; two other cysts resisted this treatment. In two cases Billroth drained strumous cysts with antiseptic precautions. In one of these cases, the cure was speedily effected; in the other, the cyst was not wholly absorbed, as there were calcareous deposits in its walls. The sac was then opened and the contents removed, after which the patient, a woman aged seventy-two, recovered. The author thinks that tapping the cyst and putting in a drainage tube ought to be done in cases where a cyst does not collapse immediately after being tapped, or in old people where the injection of iodine might be succeeded by a too strong reaction, but where extirpation of the goître might prove fatal. In the course of the last year, Billroth has extirpated goîtres in seven cases under antiseptic precautions, the results having each time been very favourable. In one of these cases the patient was suffering from malignant cystous papilloma; in another case the struma was of carcinomatous nature. All the wounds healed by first intention.—*London Med. Rec.*, Oct., 1879.

SUBPERIOSTEAL EXTIRPATION OF THE ENTIRE SCAPULA;
COMPLETE REGENERATION.

Dr. Johann Mikulicz, assistant in Billroth's clinic at Vienna, narrates a case in which the entire scapula was successfully extirpated subperiosteally, and was subsequently regenerated.—(*Langenbeck's Archiv für klin. Chirurgie*, 24 Band, erstes Heft, 1879). The patient was a girl aged nine years, who had been for some time under treatment as an out-patient. In 1876 she was suffering from synovitis of the right knee-joint, and as abscesses followed, and the parts were disorganised, an excision was performed in July, 1877. Some sinuses remained, discharging thin pus, but in 1878 she complained of pain in the region of the right shoulder. There was severe fever, and the patient rapidly became anæmic and emaciated. An abscess was discovered in the supra-spinous fossa, and this was opened under antiseptic precautions. As far as the finger could reach the scapula was found to be stripped of periosteum and bathed in pus; so that Billroth determined to lay bare the bone to the extent that it was diseased. The periosteum was entirely separated from the bone; it was only adherent to the edges, especially at the inferior angle and the acromion and coracoid processes. By means of a raspatorium its slight attachments to the two last-named were easily broken, and the scapula was thus altogether loosened from its periosteal covering. At the coracoid and the acromion processes only were the bone forceps necessary. The point of the former was left behind, and with that exception the whole of the scapula was removed. The antiseptic dressings were laid aside after fourteen days, the deeper parts being all closed. With the exception of two or three evenings after the operation there was no appearance of fever, and on the tenth day she was able to leave bed. Later on a periosteal abscess formed on the left tibia, and was opened, but the patient was discharged in August well. When she again presented herself in the middle of October the right scapula was regenerated in its whole extent, and only in form was it inferior to the normal condition. The regenerated scapula was smaller; the inner edge measured 10·5 against 12 ctm. of the opposite side, the outer 10 against 13 ctm., and the greatest width 7 against 8·75 ctm. In contrast to the smaller superficies of the bone, it could be clearly felt that the regenerated shoulder-blade was, especially at the edges, considerably thicker than at the left. The lower angle was turned somewhat outwards;

the spine was normally developed in its inner half, but in the outer part it was very slender; the coracoid process was scarcely smaller, and was firmly joined to the body of the scapula. The acromion was regenerated as an independent piece of bone, the periosteum having been divided at the time of the operation. With regard to the shoulder-joint passive motions were possible in all directions. The extent of rotation and elevation amounted almost to a right angle, the amount of forward and backward motion being nearly 60 degrees. It is not unlikely that a perfect joint surface with a cartilaginous covering had been newly formed on the scapula. The possibility of the formation of a perfect joint after resection is sufficiently proved by the writings of Luecke, Czerny, Ollier, and others. The active movements in the joint itself were somewhat limited, since the patient in all the greater extensions moved the scapula also. In spite of this the function of the arm was very satisfactory; the patient could execute all normal movements, but the complete elevation of the arm was difficult, and only a right angle was reached. The muscles of the whole extremity were strong, and not weaker than on the left side, except the supra- and infra-spinous, which were somewhat atrophied. The conditions had not altered ten months afterwards.

The number of subperiosteal, partial, and total resections of the scapula appears to be comparatively small, the inflammatory diseases of the bone only seldom presenting the indications for this operation. Of 56 cases collected and reported by Rogers in 1868, caries or necrosis gave an indication for resection of the scapula only eight times.—(*Schmidt's Jahrsb.*, Bd. 144, S. 194). Bardeleben enumerates 26 cases of total extirpation of the bone with preservation of the arm, but of these there are only three which were operated on because of caries or necrosis.—(*Lehrbuch der Chirurgie und Operationslehre*, 7 Aufl., 4 Bd., S. 668). Heyfelder described the first in 1857. The patient was weak and died of pyæmia. In a second case by Jones (1858) a girl fifteen years old recovered, but no mention is made of regeneration of the scapula. Linhart describes a third case in 1870 (*Com. der Chirurg. Operationslehre*, 1, S. 464). It was a case of total necrosis in a boy aged eleven. The periosteum and the cartilage were completely left behind, and there resulted a total regeneration of the bone. It is interesting that the scapula is the bone which has shown itself in experiments upon animals to be particularly suited for proof of the capacity of regeneration in a high degree.

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE
COLLEGE OF PHYSICIANS.

SESSION 1879-80.

HENRY H. HEAD, M.D., President.

GEORGE F. DUFFEY, M.D., Honorary Secretary.

Wednesday, January 7, 1880.

DR. FITZPATRICK in the Chair.

Notes of a Case of Movable Kidney. By THOMAS HAYDEN, F.K.Q.C.P.

Mrs. G., aged thirty-three years, a native of Claremorris, was admitted into the Mater Misericordiæ Hospital, under my care, on the 22nd of October, 1879. She was the mother of four children—the eldest ten years old—and sought admittance into hospital on account of a gastric affection which, she stated, commenced two years previously with flatulence. She consulted a medical man at that time, but derived no benefit from treatment.

Twelve months ago she began to suffer from pain in the stomach and “stitches” in the right side; the former always increased after eating meat. Last March she had a severe attack of flooding, which returned twice between that date and the 18th of May, since when menstruation has entirely ceased. Thinking she might be pregnant, she carefully explored her abdomen with her hands four months ago, and whilst doing so, detected in the region of the right kidney a “lump,” which moved freely under pressure, but gave no pain. The woman was remarkably intelligent, and gave a clear and consistent account of her illness. When admitted she was thin and pale. The muscles of the right shoulder and upper arm were much wasted; they were likewise feeble, but still capable of moving the shoulder and elbow-joints. She complained of

darting "burning" pain, which she compared to that produced by a red-hot poker, shooting round from stomach to right shoulder. Her stomach was very irritable, incapable of retaining fat of any kind; and she had suffered from hæmorrhoids since her first pregnancy, and from habitual constipation. I could not, by the most careful examination, discover organic disease of the stomach or liver, but I had no difficulty in diagnosing Cruveilhier's palsy of the right shoulder and arm in an early stage. This, and the derangement of stomach already mentioned, engaged my attention exclusively for several days. She then casually referred to a movable tumour in her right side, which, though itself not tender or painful, she had obviously associated with the pain in her stomach, and regarded as possibly malignant—hence, probably, her hesitation to direct my attention to it in the first instance.

This tumour was located in the right lumbar region, but moved freely, under gentle pressure, into the right hypochondriac, the epigastric, and the umbilical regions. It could not, however, be made to pass the median line. It was smooth, not tender, of the shape of the normal kidney—hilus directed inwards—but somewhat less than the ordinary size of that organ. It "floated" under the hand, and was obviously not in immediate contact with the anterior abdominal wall, some pressure and manœuvring being necessary to detect its outline. Slight manipulation sufficed to fix this tumour in the normal position of the kidney; it then ceased to be perceptible, except in so far as increase of fulness in the posterior lumbar region—not, however, exceeding what might be due to the presence of the kidney—should be taken to represent it. A slight movement of the patient's body, such as the act of sitting up in bed, or turning on the opposite side, again brought the tumour into relief. It gave rise to no inconvenience whatever, except mental disquietude to the patient, but this was removed by an explanation of its nature.

My object being to place on record another example of this rare anomaly, I shall confine my observations to this portion of the case exclusively. I have seen only two examples of this singular ectopia; both—the present case included—were in females about the middle period of life, who had borne several children, and in both the tumour was on the right side. The first of these cases, which was presented to me many years ago, I did not examine with the care which I should now deem satisfactory, but, reading it by the light of the present case, I have no doubt it was of the same nature. Mrs. G. remained in hospital till the 19th of November. During that period—nearly a month—I repeatedly examined the tumour under different circumstances as to state of bowels, malaise, &c., and invited my class to do so, and I have no doubt it was the right kidney out of place.

It is noteworthy that most of the cases recorded have been in the persons of women who had borne many children. Trousseau, however,

whilst admitting that women are more frequently affected than men, remarks that nine out of ten cases which had come to his knowledge were in the male subject. Relaxation and loss of elasticity of the peritoneum from long-continued distension is pre-eminently the condition favourable to displacement of the kidney. If to this be added absorption of circumrenal fat, and atrophy and relaxation of the anterior abdominal muscles, such as occur in exaggerated ascites, and in pregnancy with great enlargement of the abdomen, to whatever cause due, the three conditions would be supplied under which active movement or succussion of the body might cause renal dislocation. It must be remembered that the kidney, placed for the convenience of adjacent organs and for its own protection from injury, at a distance from the source of its blood-supply, is connected with the trunk only by means of its adipose and peritoneal investments, the latter only partial, its blood-vessels and nerves, those of the supra-renal body, and the ureter. Under the conditions mentioned the retinacular properties of the peritoneum and the adipose tissue are assumed to have been neutralised or greatly impaired; it is obvious, then, that the kidney, by its own weight, and still more if over-weighted by congestion, will tend to move in any direction which may be determined by gravitation, and that the range and direction of its movement will be regulated by the length and relative position of its vessels and nerves, and of the ureter. The kidney, being a retro-peritoneal organ, must, in any new position it may assume, continue to have the intestines in front of it—hence its indistinctness of outline to the touch, its modified resonance, and the occasional failure to detect it, owing to inflation of the bowels.

The interest attaching to this singular anomaly—for it cannot, under any aspect, be regarded as a disease—has reference to diagnosis exclusively. Patients, less enlightened than medical persons, are naturally uneasy at the presence of a tumour in the abdomen, which they are prone to regard as, in most instances, cancerous. The differential diagnosis must be made from (a) scybala or other tumour in the colon, (b) scirrhus of the pylorus, (c) mesenteric tumour, and (d) on the left side, the spleen. I cannot admit ovarian or uterine tumour, tumour of the liver, or distended gall-bladder, as at all, in the hands of a well-informed man, likely to be confounded with movable kidney, and shall, therefore, not further refer to them here.

Fæcal or other intestinal tumour would be necessarily associated with obstruction or irritation of the bowels.

A mesenteric tumour would probably have a more extensive range of movement, and its ordinary habitat in the umbilical, hypogastric, or either iliac region, whilst of the two lumbar regions it would be much more likely to stray into the left than the right. Such a tumour might, however, be in some degree fixed, and in an unusual situation, by peri-

toneal adhesion, but both this and an intestinal tumour would most probably present an uneven surface and a non-reniform outline.

A scirrhus tumour of the pyloric end of the stomach might be an occasional occupant of the umbilical or the right lumbar region, and being movable, and yielding qualified percussion-resonance, might be mistaken for a displaced kidney; but from this it should be readily distinguished not only by the symptoms, general and local, of organic disease of the stomach and pyloric obstruction, but it is much more solid, and more distinctly perceptible to the touch than the kidney.

The position of the spleen with relation to the stomach, and the history and special symptoms of disease connected with it, should suffice to distinguish it from a displaced left kidney.

The CHAIRMAN observed that some persons had gone so far as to say that wandering kidney was a myth; but he believed with Trousseau and others of great reputation that it was a possible, though rare, affection. He had never seen a case of wandering kidney, but he had seen cases of faecal tumours which sometimes simulated wandering kidney.

PROFESSOR WILLIAM MOORE said that some time ago a man was sent to his hospital who had what was supposed to be an abdominal aneurism. Afterwards an experienced physician pronounced the tumour to be a displaced kidney, but it turned out to be a tumour of the cæcum.

DR. HENRY KENNEDY observed that many years ago he brought this subject before the Society. At that time his statements were questioned. He mentioned four cases, of which two he had no doubt were examples of floating kidney. An important question was, whether or not this condition could be congenital? In one of his cases the patient was a man of twenty-five or thirty years of age. He could hide the tumour, but when he got into a certain position a tumour corresponding in shape and position to the kidney became distinctly visible on the right side. When he (Dr. Kennedy) squeezed the tumour the patient complained of a very severe and sickening pain, and that symptom alone satisfied him that it was a wandering kidney. In the second case the patient was a female, and the tumour was also on the right side. She complained of a painful dragging sensation; and he had no trouble in finding the tumour, which corresponded to a kidney. He learned that she was in the habit of applying her hand like a binder to the tumour, and he suggested the application of a binder, which gave her great relief. In her case there was distinct suffering. Did Dr. Hayden try the effect of grasping the tumour?

DR. HAYDEN said he did not consider it warrantable to do so.

DR. DUFFEY mentioned, as bearing on the differential diagnosis of movable kidney, the case of a lady who had a tumour on the right side of the abdomen, which some physicians who saw her believed might be a

floating kidney. She was subsequently seen by the late Dr. Murchison, who gave it as his opinion that the tumour was a congenital malformation of the liver, forming a movable tumour connected with that organ, such as has been described by Frerichs. As in Dr. Kennedy's case, relief was afforded by wearing a binder. It was remarkable that in the majority of instances wandering kidney occurred on the right side, and in women who had had uterine disturbances or who had borne a number of children.

The want of Correlation between Pulse and Temperature in Fever.

PROFESSOR MOORE made some remarks on the want of correlation between pulse and temperature in cases of fever. He adduced a case in which diarrhoea and rose spots were present, with a temperature of 103° Fahr.—the range of the pulse being from 12 to 14 beats under the normal standard of health till convalescence was well-nigh established, when it gradually rose to 80. In another member of the patient's family who suffered from typhoid fever, with a temperature of 102.5° Fahr. the pulse never touched 72 till the patient was convalescent. Dr. Moore cited a somewhat converse case, in which, with all the symptoms of continued fever, the temperature, with the exception of two days, was normal in the morning, and only on a few occasions presented an evening fastigium of a degree over that of health. For instance, on the 9th morning the temperature was 100.6° Fahr., pulse 96, the evening temperature being 100.6° Fahr., pulse 104. On the 12th day, morning temperature 97.6° Fahr., pulse 92; evening temperature 99° Fahr., pulse 92. On the 15th day, morning temperature 97.8° Fahr., pulse 88; evening temperature 99° Fahr., pulse 100. 20th day, morning temperature 98° Fahr., pulse 92; evening temperature 98.4° Fahr., pulse 100. On the 28th day of fever this patient contracted typhus fever; her temperature rose to 102° Fahr., and within three days she was maculated, with an evening temperature of 105° Fahr., and a pulse of 120. This patient made a good recovery. Dr. Moore brought these cases before the Society for the purpose of eliciting the experience of its members as to the occurrence of "slow pulses with high temperatures" in continued fever, and the converse, "quick pulses with low temperatures," and the relative prognostic value which they have found attaching to these opposite conditions.

DR. GRIMSHAW said he was surprised at a point being raised about variations between temperature and pulse. That they did not go *pari passu* was quite common. Anyone who had a large experience of taking temperatures knew that it was quite common to find a very high temperature with a comparatively infrequent pulse. It was not the rule, but the exceptions were sufficiently numerous. In one case of typhus he had a temperature of 94° , and a pulse so quick that he could not count

it—it must have been close on 200. In ordinary cases of fever the pulse and the temperature, no doubt, did bear a certain relation to each other. Some persons maintained that there was an increase of one degree of temperature for every increase of ten beats of the pulse. He would be sorry to put it so mathematically as that. He believed, however, that in fever cases the value of the temperature as an indicator outweighed altogether that of the pulse. Going up stairs would increase the rate of the pulse of a healthy person, while it would not alter his temperature in the smallest degree. The temperature, therefore, was the more fixed quantity of the two. Anomalies of the kind in question constantly occurred. He had met such cases over and over again, and it was very hard to explain them. He had met with a fever case in which the pulse was 44 and the temperature 100°. Dr. Henry Kennedy at that Society read a paper on slow pulse accompanying fever. In some of these cases the fevers, judging from the other signs, were intensely severe and dangerous. If he were not mistaken the infrequency of the pulse was an indication of danger rather than of safety. He should not think that a pulse of 85 with a temperature of about 100 was at all a favourable indication for the patient. They knew that quick pulses were common where there was no febrile affection whatever. The pulse might go up without the temperature being raised. As a rule, in fever cases, higher temperatures were found in the evening than in the morning, but it was quite an error to suppose that that was always so. It was the rule in typhoid fever, but not typhus; and he had met with individual cases of enteric fever in which the temperature was higher in the morning than in the evening. He could not explain why it was so, but, no doubt, very small complications occurring in persons of weakened condition would occasion a rise of temperature. In some cases of enteric fever increase of temperature indicated the approach of pneumonia, which, after a short time, developed itself sufficiently to be distinguished by percussion or auscultation. No doubt, these irregularities indicated something which sometimes could and sometimes could not be found out. It might be that individual patients had a slow pulse when in health, and that the temperatures of others were normally high. In the case of a patient under his care in Cork-street Hospital, who remained there for a considerable time after the fever had gone, he tested his temperature, and never found it under 100°, even when he was perfectly well, and his pulse was not quick. That individual had either a normally high temperature, or some obscure disease which nobody could find out. If a person had a pulse of only 50 they would not say that he was in sound health, but would be disposed to assume that there was something congenitally wrong with him, which would tell against his recovery if he got any disease. The darkest typhus spots he had ever seen were accompanied by the highest temperature he had ever noted; but, as a rule, when the spots were very dark the

temperature was not so very high, and he looked on that as rather an unfavourable sign than otherwise.

DR. HENRY KENNEDY said that the cases mentioned in his paper, which had been alluded to, were not cases of persons who had naturally low pulse, the average standard having been from 65 to 75. In some of them, which were typhus cases, the pulse was down to 50, and remained so even while the fever was at its height, but they were not fatal. His experience was that where the spots were very dark the temperature was low, and the worst cases that he had ever seen were all from 2 to 3 degrees under 98.

DR. HAYDEN said his experience was that in the worst cases of typhus, where there was low muttering delirium, contracted pupils, dry tongue, and congested features, the temperature was not extraordinarily high. It was very easy to understand how, in certain cases, a fall of temperature might not be a sign of improvement, but of the reverse. In such cases there was obviously incipient collapse. His experience of typhoid was that while the temperature was usually remarkably high, ranging from 100° to 105° in the evening, and lower by about 2 degrees in the morning, the pulse rarely exceeded 120. He would consider that a pulse above that indicated that the case was one of great gravity. At present there was a case in hospital of veritable typhus fever in which the pulse was 140. The boy was in the utmost danger. He had all the symptoms of typhus, including those of the tongue and the congestion of features, but the eruption was of a typhoid character, and he had also the typhoid diarrhoea. He (Dr. Hayden) did not see any necessary connexion between the temperature and the pulse. If they reflected on the physiology of the pulse they could understand this. The high temperature meant simply the rapid combustion of tissue; the high pulse meant something very different. Derangement of the respiration would almost of necessity involve derangement of the pulse, and *vice versa*; but the derangement of temperature did not necessarily involve an increase in the degree of the pulse. He should regard a sudden fall of the temperature and, at the same time, an increased rate of pulse in typhus as a formidable sign, generally indicative of collapse, and possibly of hæmorrhage or some such event. Out of some 400 or 500 cases of typhus that he had recorded, the morning temperature in about 12 of them had been in excess of the evening; but he did not consider the matter as one of grave significance.

DR. FOOT thought a rise in the pulse and a fall in the temperature in fever meant that the patient was going to die—it was the beginning of the cooling down of the temperature of the body to that of the external air. He would lay more stress, on the whole, upon the condition of the pulse than upon the temperature in the management of fever. A pulse of 120 or 130 in typhus was more formidable than the same rate in typhoid.

DR. J. W. MOORE recalled a saying of the late Dr. Stokes—namely, that *any want of accordance in the symptoms* in continued fever was to be regarded with great suspicion. Any want of accordance between the pulse and the temperature should lead the physician to look more deeply into the case than perhaps he otherwise would have done. At the same time he would not attach too much importance either to the rate of the pulse or to the degree of the temperature, as individual symptoms in any single case. As an illustration of the danger of depending on a want of accordance between these two symptoms, Dr. Moore alluded to two diseases—scarlatina and tubercular meningitis. Thus there might be a temperature of 104° in one stage of tubercular meningitis, and yet the patient's pulse might beat only 60 times a minute; and again, the same temperature might be accompanied by a pulse of 160 in scarlatina. Another point was the time in the twenty-four hours at which the maximal temperature was reached in typhoid or enteric fever. In the recent discussion on Dr. Cameron's paper on the outbreak of typhoid fever caused by contaminated milk, he (Dr. Moore) mentioned that a student who attended the Meath Hospital got the fever. His evening temperatures were always lower than his morning temperatures. On one or two occasions a third observation of temperature was made during the day, and it was always found that his mid-day temperature was much higher than that of the morning. There was little reason to doubt that in many cases of typhoid fever the daily fastigium was reached at noon or shortly afterwards. Dr. Purser bore him out in this, and made it a practice to take the temperature in cases of typhoid fever a third time each day—namely, about noon or shortly after. In the later stages of cases of smallpox in Cork-street Hospital during the epidemic they had often noticed that while the temperature was not hyperpyrexial at all, ranging only from 100° to 102° ; the pulse was 160 to 180. In those cases they regarded the rapid pulse as perhaps the result of paralysis of the pneumogastric nerve. He (Dr. Moore) thought a careful examination of the heart should always be made at the same time that the rate of the pulse was taken. The weakest pulse was sometimes accompanied with a violent jerking action of the heart—a condition which would sometimes be a counter-indication to the use of stimulants. Dr. J. W. Moore also mentioned that there was then in Cork-street Hospital a patient with well-marked symptoms of typhoid whose pulse is only 80, while his temperature is between 103° and 104° .

DR. DUFFEY said that as throwing some light, possibly, upon the want of correlation in some cases between the pulse and the temperature in typhoid fever, Dr. Da Costa, of Philadelphia, had lately published a lecture* on "Typhoid Fever complicated by Organic Heart Disease." Dr. Da Costa had frequently found organic heart disease complicating

* New York Medical Record, Nov. 29, 1879.

typhoid fever. In these cases the frequency of the heart's action did not increase in proportion to the height of the fever, but the pulse often remained stationary; so much so that persistence of the normal pulse throughout fever makes him always suspect disease of the heart antedating the fever, and careful examination of the case has generally proven him right in his suspicion.

The CHAIRMAN said:—In many of the cases in question evidence was wanting as to the natural condition of the pulse when the individual was not ill at all. Sir Henry Marsh told him that his father had, while in health, an intermittent pulse. He was attacked with typhus, and his pulse became rapid and regular, but feeble near the crisis of the fever. While Sir Henry was sitting by his bedside expecting his death, he felt his pulse and noticed that the intermittence was returning, and before morning the patient had passed the crisis, and he recovered.

PROFESSOR MOORE, in his reply, mentioned that within the last ten days he had seen a case of enteric fever which commenced with a high temperature in the morning and a higher in the evening. After some time the morning temperature exceeded the evening temperature, and, after the patient had convalesced, the morning high temperature fell, while the evening persisted. He had in other cases known the temperature to attain a maximum twice or three times in the twenty-four hours. In the cases which he had brought before the Society there were no cerebral or pneumonic, or any other occult symptoms to explain these anomalies.

The Society then adjourned.

WOUNDS OF JOINTS TREATED WITH POWDERED ALOES.

M. E. MILLET, in the *Arch. Méd. de Belge*, recommends the treatment of articular wounds by powdered aloes. In imitation of the veterinary surgeons, who treat articular wounds in the horse with the best success by means of the aloes powder, M. Millet tried it on the human subject, in a case where the index finger had been torn off through the metacarpophalangeal articulation, and connected with the hand only by a strip of skin. The finger was placed on a splint covered with wadding, the aloes powder thickly strewed over it—where it melted by the heat of the hand, and formed an air-tight covering—and the whole fastened to the splint with a narrow tape, without compress or charpie. The success was complete; a useful finger the result; the dressing changed but twice in a fortnight; there was no fever, no pain, and scarcely any suppuration. The pain ceased immediately on the application of the powder.—*St. Louis Courier of Medicine*.

S. W.

THE DUBLIN
SOCIETY FOR
MEDICAL
OBSERVATION

PROCEEDINGS OF THE DUBLIN OBSTETRICAL
SOCIETY.

FORTY-SECOND ANNUAL SESSION.

EDWARD B. SINCLAIR, A.M., M.D., President.

WILLIAM ROE, M.D., Honorary Secretary.

Saturday, December 20, 1879.

E. B. SINCLAIR, A.M., M.D., President, in the Chair.

Midwifery Diploma.

THE following resolution having been moved and seconded, was unanimously adopted; and the Honorary Secretary was requested to forward a copy of same to the Registrar of the University of Dublin, with a request that he would submit it to the Board at their next meeting:—

“RESOLVED—That this Society views with much satisfaction the establishment of a University degree in Midwifery, whereby this department of the healing art is raised to a level with medicine and surgery, the status of its practitioners is enhanced, and the reproach which rested upon it is completely and for ever removed.

“It is further a source of no small gratification to observe that the University which has taken the initiative in thus recognising the importance of obstetric medicine and surgery is that of Dublin—a city long distinguished for its successful cultivation and teaching of the art of midwifery, and now by its University being first in the race of enlightenment to elevate the third estate of medicine to a social equality with her two imperious sisters.”

Ovarian Tumour.

DR. W. C. NEVILLE said:—Dr. Kidd has asked me to bring under your notice a tumour which he removed some time ago from a patient in the Coombe Hospital. The patient was a little girl, aged two years and eleven months. When only two months old, her mother had first noticed a hard lump situated in the left iliac region. This had gradually increased in size without causing much distress until three months before her admission to hospital, from which time it had increased rapidly in size, pushing up the intestines, and impeding the action of the diaphragm. It thus gave rise to much dyspnoea and pain, while the child was rapidly emaciating, and had lost all appetite.

Examination showed that the abdomen was convex and symmetrical, except some slight bulging on the left side of the umbilicus, where palpation revealed the existence of fluid. To the right of, and a little below, the umbilicus, a small plate of bone, about $1\frac{1}{2}$ inches long by 1 inch broad, was felt in the walls of the tumour. Elsewhere the tumour felt smooth, firm, and tense. The girth at the level of the umbilicus was $22\frac{1}{2}$ inches. From the anterior-superior spine of the ilium to the ensiform cartilage on the right side measured $7\frac{1}{2}$ inches, and on the left $8\frac{1}{2}$ inches.

The diagnosis then made was that the tumour was an ovarian dermoid cyst, and it being obvious that the child's only chance of life lay in its early removal, Dr. Kidd performed ovariectomy, removing the tumour, which I lay before you. The operation was one of exceptional difficulty, the tumour being universally adherent, and possessing no distinct pedicle. The child died, apparently of shock, about two hours after the operation. No *post mortem* was allowed.

The tumour weighs 1 lb. and 5 ozs. It consists of one large cyst, which was tapped during the operation, and of a more solid portion, 5 inches long by $4\frac{1}{2}$ inches broad, in which a great number of smaller cysts are embedded. The large cyst held about eleven ounces of a turbid, gray-coloured fluid, alkaline in reaction, specific gravity 1020, and containing numerous oil globules, large and small granular cells, some pavement epithelium, and cholesterine crystals, together with a number of blood corpuscles. After remaining for some hours in a basin, this fluid set into a semi-jellyish, viscid mass. The cyst wall is thick and smooth on both its surfaces; at the base of this cyst, and jutting into it from the most solid portions of the tumour, is a somewhat conical mass, covered over with a white, greasy, sebaceous matter, exactly resembling in appearance and feel the *vernix caseosa*. From the surface of this mass some scattered, short, light-coloured hairs can be seen growing. Beneath this mass can be felt a large bony body, with processes stretching out into the substance of the tumour.

Making a longitudinal section through the tumour, it is seen to be trabeculated, with solid or semi-solid masses projecting into the open spaces. In general appearance one of these masses much resembles liver substance. Many small and medium-sized cysts are seen scattered through the tumour—some filled full with the white sebaceous matter, containing sometimes loose hair, and others with a pale or straw-coloured viscid matter of about the consistency of cervical mucus. The smaller cysts are arranged, some in the walls of the tumour, or arranged beneath them in a honeycombed fashion. The larger cysts, more irregular in shape, occupy the central portions of the tumour, and communicate with one another.

The plate of bone felt through the abdominal walls is now to be felt in the outer wall of the solid portion of the growth.

So far, no teeth have been found in this tumour, the examination of which is, of course, as yet incomplete. Examined microscopically, we shall be better able to define accurately its nature.

Two Cases of Warty Growths on the Vulva. By WALTER G. SMITH, M.D.

THE two cases which, by permission of your Council, I submit to the Society this evening, appear to me deserving of record, on account of their comparative rarity as well as of their diagnostic importance; and I hope that some of the members of this Society may, out of their wide experience, be able to adduce additional cases in illustration of the condition described.

In January, 1876, Mrs. C. brought two of her children—Christina, aged ten years, and Marcella, aged five years—to the Adelaide Hospital for advice concerning some peculiar growths which had appeared on their vulvæ a few months previously. The parental history may be given in a few words. The mother of the children had been married sixteen years, during which time she contracted ten pregnancies, seven of which went to full time. Her first pregnancy aborted at three months and a half, in consequence of a fall, and her other mishaps resulted either from falls or frights. Of the five children now living, the eldest is fourteen years, and the youngest four years, and none of them ever suffered from any disease or eruption of the skin. She herself has always enjoyed good health, and never had occasion to consult a doctor. Her husband is a very healthy man, and, by a former wife, had two children—both deceased. Neither the man nor his wife is liable to warts.

About six months ago, without apparent cause, the younger child, Marcella, was observed to have some warty growths at the lower part of the vulva, and at or about the same time the elder girl, Christina, became similarly affected. In both children the complaint began with itching, without any preceding discharge. The itching persisted, and became so intolerable at night that they were impelled to tear themselves, and even to draw blood. Except in walking, little other inconvenience was felt, and no pain was experienced during micturition or defecation. The children never sleep together—the elder sleeps by herself, and the younger with her aunt. They were carefully looked after, and never allowed to be dirty. Their general health is undisturbed; there is no evidence of syphilis about the head, eyes, mouth, teeth, or throat; the inguinal glands are not notably swelled; and neither of them has a speck on her body, except on the genital regions.

I will now describe in more detail the appearances the genital organs presented at the date of the first examination.

Christina.—The entire pudendum is transformed into a mass of pinkish red warts. The growth is sharply circumscribed on all sides, and in general outline resembles, to use a botanical simile, a gigantic stoma

with its two guardian cells. The warts vary in size from almost imperceptible granules up to the size of a large pea at the upper part. Both the labia majora and minora are involved, and the relative form of the labia is strictly preserved. A slight mucons discharge moistens the clefts between the papillary growths, and there is no tendency to bleeding, unless the parts be roughly scratched.

A circle of dry, pediculated warts is disposed around the anus, but not a trace of a wart, sore, or other evidence of transmission by contagion is to be seen on the adjacent surfaces of the thighs. The summits of the warts are round or flat-topped, quite smooth and glistening, and they feel firm and horny to the touch. The warty growths cease at the entrance of the vagina.

The child, although naturally pale, is hardy and strong, and has not and never had, leucorrhœa.

Marcella.—In this child the growth extends from the lower third of the vulva to behind the anus, occupying the whole perinæum. Its form is much more irregular than in her sister's case, and more closely resembles syphilitic condylomata. The warty growth projects to the right side, and overhangs and completely conceals the anus. On the inner aspect of the labia majora, at the upper part, are about a dozen small, dry, flat, and pointed warts, several of which are distinctly pediculated. As is the case with her sister, no warts occur on the sides of the thighs in contact with the labia. On the back of her left hand is a small sessile wart, precisely similar in appearance to those on the upper part of the vulva. Within the last two months the vulvar growths have somewhat lessened in size.

Treatment was confined to local measures, and a great variety of topical applications were tried, such as calomel fumigations, linimentum calcis, lead lotion and black wash, glycerin of tannin, &c. But nothing did the least good; on the contrary, by the middle of April the growths had increased in size, were more irritated, exuded an offensive discharge, and the pruritus assumed an aggravated type.

I then suggested to the mother of the children the propriety of having the growths removed by surgical means, and advised her to place them in hospital under the care of a surgical friend. This advice evidently did not commend itself to the mother, for she ceased to bring the children, and I lost sight of them until the succeeding November, when the mother again brought the girls to me with the information that they had been under the care of an "old woman." I examined the children with interest, and found that Christina was very much better. The excrescences were reduced considerably in size, especially on the left labium; all pain and itching had ceased, and the child was able to play about all day. The warty growths on Marcella, the younger child, although not so much lessened in size, were clean, and free from smell.

A fortnight later I had another opportunity of examining them, and was surprised at the remarkable improvement which had taken place. With the elder girl, the red, warty growths had almost completely disappeared, the labia were pale, limp, and nearly of normal appearance, save for some small ridged scars on their upper part. The younger girl seemed perfectly cured, except for one or two minute specks near the commissure of the vulva, and the labia presented a normal appearance.

Observing a white powder adhering to the labia, I endeavoured to collect some of it for chemical analysis, but the "old woman," who was present, was too sharp for me, and declined to let me have any, saying that her secret was her own, and she would not part with it. The application caused the children no pain, and was followed by a wash to prevent the warts growing again. It may be reasonably conjectured that the white powder used by the "old woman" was a preparation containing white arsenic.

Let me now add a few words respecting the nature of the vulvar growths on these girls. My first impression (and, indeed, that of others also who saw these cases), was that the growths were of syphilitic parentage—a species of venereal condylomata, in fact; but the family history, the aspect and condition of the little patients, the mode of origin and the distribution and progress of the new growths, together with the total absence of other tokens of syphilis—congenital or acquired—negatived this view. The importance of a correct diagnosis on this point need scarcely be insisted on, were it not that some authors appear to hesitate to admit the occurrence of non-venereal warts on the female genitals.

The suggestion then occurred to myself and others that the growths represented a form of elephantiasis of the labia majora, but several circumstances—*e.g.*, the age of the patients, the great rarity of the affection in this country, and the absence of hypertrophy of the subcutaneous connective-tissue—were opposed to this diagnosis. At the same time it is not amiss to remember, as Virchow teaches, that acuminate condylomata sometimes assume, on the prepuce and on the vulvar labia, a considerable development, and form vegetations the size of a nut or an apple, and that it is scarcely possible to separate them with precision from warty elephantiasis ("*Pathologie des Tumeurs*," 1867, Vol. I., p. 341).

The conclusion arrived at was that these multiple growths were nothing more or less than an exaggerated development of small pointed warts (acuminated condylomata), or papillomatous excrescences, originating in the papillary layer of the skin of the labia, quite independent of venereal disease or of any constitutional affection, and not even traceable to local irritation. The growths come under the heading of the circumscribed warty forms of Virchow's great group of Fibromas, which include diffuse

forms of overgrowth—*e.g.*, elephantiasis, as well as nodular and tubercular forms—*e.g.*, common warts.

Several of the authors on diseases peculiar to women, whom I have consulted, either omit all allusion to the occurrence of non-specific warts on the genitals or pass them by with a few words. Dr. Churchill (*"Diseases of Women,"* 6th Edition) refers to a case he saw in conjunction with Dr. Wilmot in which the external organs were one mass of warts covering and blocking up the vulva, and this in a child not more than ten years old. Dr. Graily Hewitt (*"Diseases of Women,"* 2nd Edit., p. 642) merely remarks that warts of non-syphilitic character, and resembling those seen on other parts of the body, may be found growing on some part of the vulvar surface, and states that the diagnosis of the syphilitic from the non-syphilitic cases is not usually a matter of any difficulty.

Sir C. Clarke, writing nearly sixty years ago (*"Diseases of Females,"* Vol. I., p. 283), refers at some length to warty tumours on the vulva, and takes occasion to mention that "it is not necessary to the formation of these tumours that the part should have been the seat of any syphilitic complaint, for they may arise in parts which have never been so affected." The fullest description of them which I have seen occurs in the treatise of Dr. Ashwell on *"Diseases Peculiar to Women,"* 1844, from which I will quote a few sentences. He says:—"The external genitals are liable to warty tumours, which vary much in their appearance and size as well as in the symptoms which attend them. They are frequently the result of syphilitic disease, or they may arise from neglect of cleanliness. Sometimes there is no evident cause; but they are apt to be induced by any disorder which keeps up a chronic inflammatory action in the sexual organs. They may attack the labia or nymphæ, or, beginning at either, may extend to and involve the other parts of the vulva." But, from what follows after, it seems doubtful if Dr. Ashwell drew a distinction between warty growths and diffuse hypertrophy (elephantiasis) of the vulvar tissues.

DR. MACSWINEY said that Dr. Smith appeared to have entirely excluded syphilis as a cause of the warts. As regards the specific applied by the old woman, it is not easy to understand how it could have been white arsenic. Persons outside the medical profession could not get white arsenic unless it were mixed with indigo or soot. No doubt it might be bought, although not easily. He thought it more likely that the powder was alum or sulphate of zinc. He had more than once found powdered alum to be used among the poor for discharging sores or warty growths on the groins or between the genitals of children.

DR. CRANNY asked did Dr. Smith make any trial of the acid nitrate of mercury. He (Dr. Cranny) had found it useful in cases of such growths, but they were syphilitic ones.

DR. M'CLINTOCK said he had seen in adults conditions similar to these in the drawing which Dr. Smith had laid before them ; but if an adult came to him with one or both labia of the pudendum so affected it would be very hard to convince him that there was not something of syphilis in the case. No doubt in the present case there was no ground for supposing that there had been any syphilis. That there might be warty conditions of the vulva independent of any syphilitic causes he did not for a moment attempt to deny.

DR. BYRNE said he had never seen any case like the present except in connexion with syphilitic disease. Had Dr. Smith used chromic acid with his patient? They must remember that children were very often inclined to have warts. He had seen some children whose hands and bodies were all covered over with them ; and possibly in the present instance it merely happened that the warts, instead of growing over the surface elsewhere, appeared on the vulva.

DR. HENRY KENNEDY said that there could be no doubt but that warts occurred from syphilis and without it. Dr. Kidd would bear him out with respect to a case that they had both recently seen of a young unmarried lady, where there was no reason whatever to suppose the existence of any syphilitic disease, and who was a great sufferer from warts growing round the meatus, of small size, which gave great annoyance.

The Society then adjourned.

Saturday, January 3, 1880.

Uterine Polypus.

DR. S. R. MASON exhibited a polypus which had been attached to an inverted uterus.

Ellen Farrell, aged fifty-five years, was admitted to the chronic ward of the Coombe Hospital on December 29th, 1879.

The surface of the polypus was irregularly lobulated ; at its lower part it was commencing to slough, and it was attached to the uterus by a narrow pedicle about one inch in length.

History.—Married eight years ; was never pregnant ; menstruation always regular until sixteen years ago, when it became profuse, lasting five or six days, unaccompanied by pain. Her condition continued unchanged until three years ago, when menstruation began to be irregular, occasionally missing a period or two, and then returning in increased quantity. Two years ago it stopped altogether, and since then she has felt much stronger and better. About a month ago she felt a tumour in vagina, which she said used to come down during coughing or when taking exercise. A day before admission to hospital, while straining at stool, the tumour protruded through the vulva.

On examination, shortly after admission to hospital, a large fibrous polypus was found protruding through the vulva. When the finger was passed up along, what appeared to be the pedicle of the polypus, the sharp edges of the constricting os could be distinctly felt, but the fundus of the uterus could not be felt above the pubes, and as the rectum was loaded with fæces no further examination was made.

1st January, 1880.—Patient having been chloroformed, it was found, on passing the finger into the vagina, that the os uteri could not be felt, the vagina being continuous with the tumour all round, and the finger in the rectum felt a cup-like depression at the summit of the vagina, proving the uterus to be inverted. On passing the finger down from the uterus to the tumour, a ring of thickened tissue could be felt separating the uterus from the pedicle of the tumour. On the right side of the uterus the opening of the Fallopian tube could be seen. The pedicle was divided close to the tumour with an *ecraseur*, thus avoiding the danger of opening into the peritoneum. The uterus was then with some difficulty restored to its normal position, the fundus being first pushed within the os uteri with the finger, and then completely re-inverted by pressing it upwards with a long steel instrument with a bulbous extremity. During the entire operation the patient did not lose two drachms of blood. Patient is now doing well.

A case somewhat similar to this one is recorded by Dr. M'Clintock, but with this difference—that after the removal of the polypus Dr. M'Clintock did not make any attempt to replace the uterus, on account of the “patient's extreme intolerance of any manipulation;” but one week afterwards he ligatured the uterus close to the vagina; the ligature was left on for three days, and the uterus was then removed with an *ecraseur*. This patient subsequently recovered.

Some years ago Dr. Roe successfully removed a polypus from an inverted uterus, but his patient would not permit any attempt to reinvert the uterus.

During the session before last Dr. Macan brought before this Society a case in which he first removed a polypus from an inverted uterus; then, having failed in an attempt to reduce the inversion, he amputated the uterus.

The PRESIDENT.—Had the bleeding ceased before she was admitted?

DR. MASON.—She had had no bleeding for two years.

DR. KIDD said the woman was one of the *irritable genus*. She would not allow a full and satisfactory examination of the tumour until they had her under the influence of chloroform, and the result was that until she was on the table he had no opportunity of making an examination himself. On passing his finger into the vagina, he was at once struck by the absence of the os round the neck of the tumour; and on further examination he was able to distinguish the opening of one of the Fallo-

pian tubes on the surface of the tumour. On getting the tumour between his fingers, he came to a part where he could trace the rounded outline of the fundus as distinguished from the pedicle of the tumour. That and the opening of the Fallopian tube enabled him to say where the uterus ended, and where the tumour began. As the patient was fully under the influence of chloroform, he had no opportunity—even if he believed in it—of putting the old-fashioned test to trial of the uterus being sensitive and the polypus not. Having ascertained where the uterus ended and the tumour began, he applied the wire of the ecraseur close to the tumour. He then proceeded to divide it, and in doing so worked the ecraseur more slowly than they ordinarily did. He felt that hæmorrhage might occur, and that if it did there would be no satisfactory way of controlling it. At first there was a considerable gush of blood when the tumour was removed, but that very soon subsided. He then attempted to reduce the inverted uterus. The orifice of the vagina was exceedingly small—the woman never, he believed, having had children—and it had undergone atrophy through age. It was impossible, without violence, to get his hand into the vagina. He succeeded in introducing his two forefingers, and having got the uterus between them, he compressed it as much as possible. The compression was, of course, imperfect. Having kept up the compression for some time, he placed his finger against the fundus, where the polypus had been attached, and made pressure for some time without effect. Then it began to yield, and in a moment it went up. Not liking to use a sound, and fearing that his finger might go through the tissue of the uterus, he passed the end of a round-handled instrument two and a half inches into the uterine cavity. No hæmorrhage afterwards took place. The vagina was then plugged. Yesterday morning the plugs were removed, and that morning the woman was, to all appearances, well; the uterus was in its place, and the condition of matters was quite normal. It was not easy to reinvert the uterus under circumstances of the kind, but, if it could be done, it was much better than amputation. One interesting feature was the length of time the tumour must have lain in the uterus without producing serious bleeding. It was rather large and hard for a uterine polypus. Menstruation seemed to have ceased in the woman some years ago—very much at the period at which it usually does. Whether the tumour was lying in the vagina before she came into hospital, and was expelled by one effort, they had no facts to enable them to know. There had been no expulsive pains of any kind. When it came through the vulva, which occurred during defecation, there was a considerable amount of hæmorrhage, which frightened her.

DR. ATTHILL observed that the case was in many respects like one which he brought before the Society in the course of last session. The difference between the two chiefly consisted in the position of the poly-

pus. In his (Dr. Atthill's) case the uterus was inverted by a fibrous tumour attached, by a wide base, to the fundus. He enucleated it, and subsequently, without great difficulty, reinverted the uterus. The patient had since recovered her health perfectly. She was a young woman, and after the reinversion the uterus was found to be very large—three and a half inches in length. The inversion was of considerable standing—at least, eight or ten months. A most interesting part of Dr. Kidd's case was that it confirmed a remark made by Dr. White, of Buffalo, U.S., America, that the cases in which reinversion was really difficult were those in which the uterus was imperfectly involuted. That was so in cases which occurred after labour, when attempts were sometimes made to reinvert the uterus before complete involution. Cases of inversion by tumour were not by any means so difficult of reinversion as those latter.

The PRESIDENT.—Involution had nothing to say to Dr. Kidd's case. Did not the easy way in which the uterus went up show that it had not been inverted for a very long time?

DR. KIDD.—Dr. Mason told me that when he first examined the case he felt the neck of the uterus encircling the tumour, so that there could not have been complete inversion for any length of time.

RETENTION OF THE FÆCES.

DR. MATTHEWS DUNCAN remarks (*Med. Times and Gazette*, November, 1879, p. 521) that constipation with accumulation of retained fæces often forms considerable tumours in the abdomen, and is frequently mistaken for malignant and other diseases. Another form of retention is that when little bits of fæces are found sticking to the mucous membrane of the rectum, and causing discomfort, until they are each one washed away by enemata—a task often very difficult to accomplish, or removed piecemeal by the patient's fingers. Vaginal rectocele is another source of great discomfort where it exists, requiring manual aid on each occasion of defæcation. The anal aperture may be congenitally too small, thus causing retention, or it may become too small after injudiciously managed operations for piles. Scybala may cause retention of solid fæces, allowing the fluid portions of the alvine discharge to pass, and so, by irritation, causing constant purging, the solid portions at the same time accumulating, and often forming large tumours, simulating at times malignant disease. Colotomy may often be demanded, although fæces are passing copiously, the fluid portions escaping through the strictured parts, while the solid portions are retained and accumulated. Constipation, therefore, is not necessarily a symptom of retention of fæces, it being possible that there may be copious evacuations while retention is going on.—*Lond. Med. Record*, Jan. 15, 1880.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Cirrhosis of Liver ; Patulous Umbilical Vein.—DR. NIXON said: This case illustrates the development of one of the forms of a collateral circulation established in cases of extreme cirrhosis of the liver. The patient was a young man aged twenty-one, a schoolmaster, of strictly temperate habits, and was admitted into the Mater Misericordiæ Hospital about the middle of August last. Two years previously, after going to bed in his usual condition of health, he was seized with a severe pain in the epigastrium and vomiting—at first of the contents of his stomach, and afterwards of a couple of quarts of dark clotted blood. The vomiting continued for some days, he rapidly became jaundiced, and subsequently the abdomen became ascitic, and he got dropsy of the legs. After he had been for some time under treatment, the jaundice disappeared, the dropsy of the abdomen and legs gradually subsided, and he went about in his ordinary condition of health.

About a year before he came to the hospital he had an attack of great pain in the region of the umbilicus, and a tumour of the size of a small orange made its appearance in this situation. Sometime afterwards he complained more or less of malaise, loss of appetite, and general weakness. When he came to hospital his condition was as follows:—He was a tall, ill-nourished boy, presenting the appearance of one who had lost a great quantity of blood. His abdomen was considerably enlarged, but there was no evidence of the existence of fluid in the cavity of the peritoneum. He had an extremely large splenic tumour. On examining the region of the umbilicus we found a swelling about the size of the closed hand. It was of a distinct bluish colour; its covering was considerably thinned, and it evidently consisted of a congeries of enlarged veins—in fact, it was an enormously developed caput Medusæ. Leading from the tumour, upwards and downwards, were a number of veins. These veins were considerably enlarged, and during a forcible expiration became very tortuous, and distended to the size of an ordinary writing pencil. On examining the liver we had some difficulty in determining a diminution of dulness on percussion; there was great tympanitic distension of the stomach, but, after a careful examination, we satisfied ourselves that there was some decrease in the normal extent of hepatic dulness. The case was looked upon as one of cirrhosis of

the liver, with an accompanying perihepatitis. The boy had some dropsy of the feet, although there were no evidences of ascites present. I thought it probable that the dropsy of the feet and the development of the distended veins on the surface of the abdomen were due probably to a certain amount of compression of the inferior vena cava by the contraction resulting from the perihepatitis. While he was under my care in the hospital the enlarged cluster of veins gave way at the umbilicus, and he had a hæmorrhage to the extent of two or three ounces. I thought it advisable to apply a compress over the tumour with the view of affording support, and for this purpose I obtained a suitable elastic bandage. The patient at first experienced great relief from this, and in a few days was able to get up and go about the ward; the attacks of vomiting, previously complained of, subsided. Some days afterwards he complained of not being able to bear the pressure of the bandage, and accordingly it was taken off. Subsequently he got a feverish attack with gastric disturbance. His temperature rose to 102° F., and he had diarrhœa—in fact, the conditions developed resembled those of typhoid fever. The attack lasted for a few days, after which he was able to go about the ward as usual. On the 4th of October I saw him in the ward. He was then able to go about without any distressing symptoms; but when I was about leaving the hospital I was told that he had suddenly vomited a large quantity of blood—certainly to the extent of a couple of quarts. He soon passed into a state of collapse. Incessant vomiting ensued: he could not even retain the smallest particle of ice; his tongue became brown and dry, and he died on the 8th of October.

On a *post mortem* we found that his spleen was enormously enlarged, and weighed 36 ounces. There was some fluid in the peritoneum, and the stomach was enormously distended. The umbilical tumour was found to consist, as we thought, of a congeries of large veins, which communicated with the epigastric veins and the radicles of the internal mammary veins. The liver presented a remarkably good example of cirrhosis and perihepatitis. The left lobe—a mere tailed appendage of the right one—does not present any marked cirrhotic change. The vena portæ is considerably enlarged, and, joining its left branch, at right angles, is a vein through which you can pass your little finger. This vein runs along the ligamentum teres to the umbilicus.

The chief point of interest in the case arises from the conditions of the circulation, which were established. I think that the case was one of congenital cirrhosis of the liver, and that at the time the boy got the jaundice and the attack of hæmatemesis, two years before his admission into the hospital, perihepatitis had been set up. As a result of this, there was a certain amount of compression, though not in a very great degree, exercised on the inferior vena cava, diminishing its calibre, as

may be observed by passing the finger through it. This in itself would serve to explain the occurrence of dropsy about the ankles. I do not see how otherwise we can explain it, considering the more or less complete absence of ascites in the case. I think the conditions were more or less congenital, because there is no distinct cirrhotic change in the left lobe of the liver. Probably it is an instance of the umbilical vein remaining patulous after birth, and at the time the patient got the attack of peri-hepatitis the principal current of blood, that ought to have travelled through the vena porta, passed down to the umbilicus through the unobliterated vein.—*November 29, 1879.*

Multiple Pyæmic Abscesses of Liver and Lung.—DR. WALTER G. SMITH exhibited the liver and lungs of a woman who came under his care at the Adelaide Hospital. She was a woman of about forty-five years of age, strongly built, and of excellent bodily health. In the first week of last August she suffered from a lancinating pain in the right shoulder, the right knee and leg. She never had any pain in the left leg. She lost her appetite, and slept badly. She had received no injury. At the time she was admitted into the Adelaide Hospital there was not the slightest mark of injury on the surface of the body. She looked extremely ill, but still was cheerful. Her breathing was principally abdominal; her respirations feeble and forty to the minute. No visible signs of anything astray were discovered in her chest, with the exception of some sibilus over the bases of the lungs, especially the right. The tongue was furred; the skin very harsh and dry; the pulse was 150; the stools were whitish, but could not be said to be devoid of bile; the urine was very scanty—in twenty-four hours only eighteen ounces; there was a trace of bile pigment, but no evidence of albumen; scattered over the lower half of the body were a number of purpuric spots—some of them black. A diagnosis was finally made of pyæmic hepatitis. She became delirious twenty-four hours before her death.

A *post mortem* examination was made twenty-four hours after death in presence of Dr. Head and a class of students. On opening the chest the heart was extremely soft and flabby, recalling the condition found in fatal cases of typhus fever. There was no pericarditis. The blood which escaped from the venæ cavæ was dark and tarry; numerous patches of atheroma in ascending aorta. The wall of the left ventricle was extremely thin and soft, but it contained no clots. At first sight the valves of the heart appeared to be healthy. On close inspection a few spots of atheroma were found on under-surface of mitral valve, but the edges of all the valves were healthy. The left lung was congested from top to bottom. Looking to the right lung the upper lobe was consolidated throughout. It was friable, and it broke down in tearing it from the adhesions that fixed it to the ribs. The cut surface of the rest of the

lungs was marbled with hæmorrhagic infarcts. On close inspection the minute vessels were seen to be plugged with clots. When they came to examine the abdomen there was an inch or more of abdominal fat, no trace of peritonitis. The liver was somewhat enlarged, very soft, and friable. The general colour of the surface of the liver was a buff yellow, mottled with innumerable red spots. On section of the right lobe the surface was light yellow, marked with dark red specks, and in places there were larger red masses, which were quite friable, and broke down into a red *débris* when gently touched. There was puriform softening. There were no concretions in the gall-bladder. The stomach was carefully examined for ulcer, with negative results. The left kidney was enlarged. It might not be quite possible to say with certainty what was the original cause of these multiple pyæmic processes in the liver. The apex of the right lung was breaking down, and he thought the source of pyæmic mischief in the liver arose from the lung. The jaundice was well marked in this case, and one of the chief symptoms was a well-marked local tenderness over the right ribs, and the jaundice developed without any of the usual causes to account for it.—*December 6, 1879.*

Cirrhosis of Kidneys ; Hypertrophy and Dilatation of Heart ; Hydrothorax and Hydropericardium ; Nutmeg Liver.—DR. J. W. MOORE exhibited the kidneys, heart, lungs, and portion of the liver of a hodman, aged nineteen, who had been admitted into the Meath Hospital in the middle of last October. The case was of interest as affording a specimen of cirrhosis of the kidneys at that young age. The patient, at the time of his admission, was suffering from extreme difficulty of breathing. There was a large collection of fluid in the right pleura, and a moderate collection in the left pleura. Thoracentesis was performed, and sixty-six ounces of a clear watery serum, which had a specific gravity of 1010, were drawn off by aspiration from the right pleural cavity. The relief afforded by the operation was very great, and the patient rallied considerably. A better opportunity was now afforded of examining the condition of the heart, and a marked systolic apex murmur, extending well to the left, was detected. The cardiac impulse was strong and diffuse, contrasting remarkably with a weak, compressible, and irregular pulse at the wrist. The diagnosis arrived at was that the patient had mitral regurgitation, and that the fluid accumulations in the pericardium and pleuræ were the result of that lesion.

As time went on he rallied considerably, but there was a symptom to which he (Dr. Moore) did not pay sufficient attention at the time. He suffered from a very inordinate thirst. However, the quantity of urine passed was not very extreme. Gradually excessive sickness of the stomach came on, the difficulty of breathing returned, and it appeared that his heart was gradually failing. He sank and died last Tuesday.

Dr. Foot very kindly made a *post mortem* examination with the greatest care. The following notes were taken at the time of the autopsy :—

“Body tall, fairly nourished; œdema of each leg and thigh, the outer aspect of the right thigh the seat of a diffused redness. Each *pleural cavity* contained a clear brownish serum, free from flakes. After the removal of the lungs, seven pints of fluid were taken from the cavity of the chest. Each *lung* was airless and leathery, of a slate-blue—the colour of wood-pigeon. Both lungs collapsed, and were, on section, of a deep crimson colour; much dark blood flowed from them, and several nodules of pulmonary apoplexy were found. No lymph or fibrinous exudation lay on either the costal or visceral pleuræ, or on the surface of the diaphragm. There was not a single adhesion between the lungs and the sides of the chest. The *heart* was very large—its cavities, especially the auricles, contained much black clot. At the apex of the left ventricle there was what appeared to be an adherent buff-coloured clot, softened in the centre. From this puriform matter seemed to flow, as the incision opening the ventricle divided it. It was reserved for further examination. The *liver* was large, and very much myristicated. The *spleen* was of moderate size. The *kidneys* were very granular; their surface was as if sanded; the cortical substance was diminished. The *transverse colon* took a dip nearly to the pubes, and was much inflated. There was no fluid in the pericardium or in the peritoneal cavity. The mitral valve admitted three fingers, and the weight of the heart, emptied of coagula, was 15 ozs. The right kidney weighed $4\frac{1}{2}$ ozs., the left $5\frac{1}{2}$ ozs.”

Dr. Moore confessed he never suspected for a moment that this patient was the subject of chronic interstitial nephritis. In the first place the age of the patient was against that idea; in the second place the advanced state of the case when admitted to hospital concealed the usual well-known symptoms of that disease, and especially the characteristic condition of the urine in the affection. The probable sequence of events in the case was this—the interstitial nephritis led to hypertrophy of the heart, which, in turn, developed a functional insufficiency of the mitral valves. Ultimately an hydræmic condition was established, and the large pleural and pericardial effusions (hydrothorax and hydropericardium) took place. The case was interesting as showing how the advanced symptoms of mitral regurgitation tended to conceal those of the original disease—namely, interstitial nephritis. As regards the etiology of this affection in the present instance, the patient had not been intemperate, nor was there any history of lead-poisoning or of gout.—*December 6, 1879.*

THE DOCTOR'S
SOCIETY FOR
MEDICAL
OBSERVATION

CLINICAL RECORDS.

A Case of Septic Infection. By ROBERT S. ARCHER, A.B., M.B., Dubl.;
Liverpool.

Mrs. D., multipara. Labour on morning of 22nd December, 1878. For some three or four weeks before labour set in the patient suffered from occasional losses of blood per vaginam, which, however, were determined not to depend on placenta prævia. The labour was rather tedious, the pains for a long time being weak and ineffectual. After the child was born, the placenta not being expelled within the ordinary time, and there being a moderate amount of hæmorrhage, I determined upon removal by the hand. I accordingly introduced my hand into the uterus, and attempted to "peel off" the "after-birth," which, however, proved to be an undertaking by no means easy of accomplishment, it being very friable, breaking up into pieces as I separated it. I removed as much of the organ as I possibly could—in fact, practically the whole of it—but felt confident that I had left a small shred behind. On examination the placenta was found to be composed, in parts, of friable fibrous-like tissue, resembling very much the fibrous blood-clot one meets with in aneurismal sacs. As some bleeding continued, and the uterus did not seem to contract as it ought to, I used an injection of warm water, as recommended by Dr. Atthill, which had the desired effect, and having administered a dose of ergot, I left my patient—not, however, without some gloomy forebodings of future unpleasant consequences, which, I regret to say, proved to be but too true.

All seemed to be going on smoothly until 12 o'clock noon on December 23rd, when I found the pulse to be 130, and temperature 103·3° F. She had passed a fairly good night; tongue was dry; there was some abdominal distension and tympanites, and tenderness on pressure, especially low down in the left iliac region; a slight, somewhat foetid, discharge from vagina. I used an injection of a solution of carbolic acid (about 1 in 60) with a Higginson's syringe, the vaginal tube of which I inserted into the os, and was careful not to inject any air. 7 30 p.m.—Pulse 132, temperature 103·5° F., respiration 48. Again used injection.

Dec. 24, 9 30 a.m.—Pulse 128, temperature 102·6°, respiration 35. Slept well; tympanites and tenderness slightly increased. Used the catheter and injection. At 12 noon Dr. Samuels (whose able assistance and advice I had from henceforth in the treatment of the case) reported the pulse to be 126, and temperature 101·4° F. 7 p.m.—Pulse 136, temperature 103·5° F., respiration 35. Used catheter, carbolic acid

injection; taking full doses of liq. opii sed. (Battley's) every four hours; beef-tea, milk, and a small quantity of brandy. 11 p.m.—Pulse 136, temperature 103° F., respiration 36.

Dec. 25, 10 a.m.—Pulse 130, temperature 102·4°, respiration 40. Rather drowsy; throat slightly sore; abdominal symptoms improved; injection as before. 10 p.m.—Pulse 136, temperature 100·7°, respiration 44. Injection, &c., administered.

Dec. 26, 9 45 a.m.—Pulse 134, temperature 102·4°, respiration 40. A good deal troubled with short dry cough. Pleuritic friction sound heard in infero-antero-lateral portion of left chest; percussion note and respiration fairly good elsewhere in chest; tongue moistish and rather clean; *a peculiar sweetish odour of breath*; vaginal discharge much improved as regards foetor. 6 p.m.—Pulse 140, temperature 102·6°, respiration 36. 10 p.m.—Pulse 132, temperature 100·5°.

Dec. 27, 9 30 a.m.—Pulse 136, temperature 100·4°, respiration 36. Tongue rather dry; very drowsy, owing to the opium; pupils slightly contracted; abdominal pain easier; discharge almost odourless. We still continue injections night and morning.

Dec. 28, 9 45 a.m.—Pulse 138, temperature 102·2°, respiration 40. Tongue rather dry; abdomen somewhat distended. Dr. Samuels saw the patient at about 2 45 p.m., and left the following note for me:—
“Cough a little more troublesome, and seems to disturb the abdomen too much, so I gave the dose of liq. opii remaining in the bottle (the last dose being taken at 5 o'clock this morning). I administered an enema containing two eggs and an oz. of brandy. Before leaving pulse came down from 138 to 132. I recommended the turpentine and poppy stupes to be again applied. Will you use your own judgment about going on with liq. opii? At all events, I would be afraid to omit the suppository.”
We had been using morphia suppositories for the last two or three nights. 7 15 p.m.—Pulse 130, temperature 100·9°, respiration 47.

Dec. 29, 11 a.m.—Pulse 134, temperature 101·3°, respiration 42. Slept during the night, and also passed a large semi-solid motion and urine; cough seems easier; skin moist; drew off a small quantity of urine; used vaginal douche. Taking all things into account, her general condition seemed slightly improved this morning. Dr. Samuels' note at 3 15 p.m.:—“Pulse 130, temperature 100·3°. Gave a dose of liq. opii, used catheter, and mutton broth enema. I am afraid it is too soon to cease the suppositories.”

Dec. 30, 9 30 a.m.—Pulse 129, temperature 100·1°. Respiration exhibited a peculiar rhythm this morning; after making seven, eight, or nine short shallow respiratory movements she stops breathing for several seconds, and begins again to go the same round. It is not the respiration of ascending and descending rhythm characteristic of “Cheyne-Stokes' respiration;” each respiratory movement is equally shallow throughout

the entire cycle, instead of commencing with a shallow movement, gradually mounting to a maximum, and then declining again. I was at a loss to explain this phenomenon, and it caused me no small amount of alarm. I suppose it owed its origin to some neurotic derangement. Tongue very dry; friction sound at base of left lung anteriorly and posteriorly; slight œdema of bases of lungs. 10 30 p.m.—Pulse 136, temperature 101.6° , respiration 43. Respiration has regained its normal rhythm; face rather anxious; tongue dry; perspiring.

Dec. 31, 9 30 a.m.—Pulse 124, temperature 100.1° , respiration 44. Had a small solid motion about half an hour before my visit; cough not very troublesome; abdominal symptoms greatly abated; slight œdema of bases of both lungs; some evidence of a small circumscribed patch of pleuro-pneumonia in the lower lobe of left lung antero-laterally. We decided this morning that we might diminish the amount of opium the patient had been hitherto taking, and direct our efforts to combating the pulmonary symptoms, if necessary, and improving the general condition. She was accordingly ordered quinine in effervescence. Dr. S.'s note at 12 45 p.m. was as follows:—"Pulse 127, temperature 99.4° , respiration 38. Had a semi-solid motion at 12 30 p.m., and feels as if another were about to come on. I gave a dose (m. 20) of liq. opii, and directed to have no more given until your visit to-night, unless the bowels were moved. I am afraid diarrhœa may come on if the suppositories be omitted." 10 30 p.m.—Pulse 132, temperature 101.1° , respiration 40.

Jan. 1, 1879, 9 30 a.m.—Pulse 130, temperature 100° , respiration 38.

Jan. 2, 10 a.m.—Pulse 124, temperature 100.7° , respiration 32. Had a quiet night; tongue moister this morning; somnolent; had some liq. opii sed. (Battley's) last night; no suppository; used catheter; complaining of left buttock being sore; skin slightly chafed in this position. 7 50 p.m.—Pulse 122, temperature 100.7° , respiration 40. Had three motions and voided urine during the day; cheeks flushed.

Jan. 3, 9 45 a.m.—Pulse 135, feeble, temperature 101.8° , respiration 44. Had a semi-solid motion and passed urine early this morning; masked respiration with rather dry râles audible in all parts of the chest; some dullness towards bases; râles best marked in left chest anteriorly. 8 p.m.—Pulse 140, temperature 103.2° , respiration 47. Administered an enema, consisting of beef-tea half pint, brandy one oz., and one egg. Introduced a morphia suppository. She was ordered to-day the following mixture:—

R.—Tinct. digitalis	3 ii.
Quin. sulphatis	grs. 24
Acid sulph. dil.	m. 24
Spts. chloroformi	3 iv.
Syr. scillæ	3 vi.
Aq. camphoræ	3 vi.

Ft. mist.—Sig. 3 ss. quartâ quâque horâ.

Jan. 4, 10 a.m.—Pulse 134, temperature 102·7°, respiration 46. Passed a good night; cough does not trouble her much; can move about in bed with much more ease; chest symptoms much improved; hardly any râles audible this morning. Dr. S. reports at 1 p.m.:—"Had three semi-liquid motions since your visit this morning; gave a dose of liq. opii sed., after which pulse came down from 135 to 126. Administered an enema of one egg, brandy one oz., in a small cupful of warm water. If bowels should be moved before you call to-night you may use suppository. I perceive a very disagreeable smell from vaginal secretion, which I think will require the douche." 10 p.m.—Pulse 150, temperature 102·8°, respiration 45. Had a rigor at 9 40 p.m.; used vaginal douche, and introduced a suppository.

Jan. 5, 11 30 a.m.—Pulse 132, temperature 102·7°, respiration 42. Had a good night; looks somewhat better. Used vaginal douche. Ordered:—

R.—Liq. ferri perchl. fort. (B. P.)	3iss.
Quin. Sulph. . . .	grs. 48
Glycerini puri . . .	3i.
Aquæ	3vi.

M. ft. Mist.—Sig. Cochl. ii. parv. c. cochl. ii. ampla aquæ quartâ quâque horâ. 9 p.m.—Pulse 136, temperature 103·2°, respiration 50. Bowels moved four times between 6 and 8 p.m.; retching brings up a small quantity of mucus; tongue moist. Introduced a suppository.

Jan. 6, 9 a.m.—Pulse 127, temperature 100·8°, respiration 45; retching still continues. 7 45 p.m.—Pulse 120, temperature 100°, respiration 39. Had two fluid motions during day. Used catheter, and ordered morphia hydrochl., gr. $\frac{1}{4}$, in pill.

Jan. 7, 9 50 a.m.—Pulse 118, temperature 99·7°, respiration 30. Had a good night; one semi-solid motion at 8 a.m. 6 p.m.—Pulse 120, thready; temperature 101°, respiration 38. Four small motions since morning visit.

Jan. 8, 9 40 a.m.—Pulse 128, small and weak; temperature 100·8°, respiration 38. Had a motion about 6 a.m., and was given one of the morphia pills; drowsy. 7 30 p.m.—Pulse 123, temperature 99·8°, respiration 38. Left leg a good deal swollen and œdematous; put on a flannel bandage; four motions during the day.

Jan. 9, 10 a.m.—Pulse 125, temperature 99·3°, respiration 35. Dr. Samuels reports at 3 p.m.:—"Pulse 118: two motions since morning; gave a pill." 9 p.m.—Pulse 130, temperature 100·6°, respiration 36. Complains of left leg being painful.

Jan. 10, 10 a.m.—Pulse 126, temperature 100·6°, respiration 36. Somnolent; had a pill about 4 a.m. in consequence of bowels being opened; tongue dry.

Jan. 11., 10 a.m.—Pulse 120, temperature 100.5° , respiration 30. In much the same condition as yesterday morning.

Jan. 12, 10 30 a.m.—Pulse 125, temperature 99.7° , respiration 34.
7 30 p.m.—Pulse 118, temperature 99.7° , respiration 29.

Jan. 13, 10 45 a.m.—Pulse 123, temperature 99.3° , respiration 30. Tongue rather dry; no motion since afternoon of 11th.

Jan. 14, 9 30 a.m.—Pulse 122, temperature 100.2° .

Jan. 15, 10 45 a.m.—Pulse 120, temperature 99.2° . Tongue dry; still very weak; occasionally has nourishing enemata.

Jan. 16, 10 45 a.m.—Pulse 125, variable; temperature 101.2° . Had a motion last evening, and another about 6 a.m. I could discover no new local complication to account for temperature running up nearly two degrees since the previous evening. 8 p.m.—Pulse 114, temperature 98.7° . I used the catheter, as she had passed no urine since the morning; somnolent.

Jan. 17, 10 45 a.m.—Pulse 120, temperature 101.4° . 6 30 p.m.—Pulse 120, temperature 101° .

Jan. 18, 10 40 a.m.—Pulse 120, temperature 100.8° . Slept well; passes her urine now; somnolent; says her legs "feel like logs;" tongue dry. 8 30 p.m.—Pulse 123, temperature 101° .

Jan. 19, 11 a.m.—Pulse 125, temperature 100.8° . Passed a restless night; took a pill at 6 a.m.; had a motion from bowels this morning; hardly any abdominal tenderness now.

Jan. 20, 10 45 a.m.—Pulse 115, temperature 99° . Tongue moist; pain in right groin on coughing. 7 45 p.m.—Pulse 125, temperature 100.7° . Solid motion from bowels about 3 p.m.; bowels somewhat distended and tympanitic; tenderness on pressure in right inguinal region, which, she says, "goes right down into her bowels." This is probably owing to a slight attack of pelvic cellulitis.

Jan. 21, 10 50 a.m.—Pulse 108, temperature 99° . Slept fairly well; had a pill about 10 p.m. last night; tenderness in right inguinal region still continues. 6 30 p.m.—Pulse 120, temperature 100.7° .

Jan. 22, 10 30 p.m.—Pulse 112, temperature 90.4° . Passed a good night; tongue moist; pain in right groin easier.

Jan. 23, 10 30 a.m.—Pulse 114, temperature 99.3° .

My notes of the case cease here, as I considered the patient to be fairly convalescent. However, in this I was disappointed, as her convalescence was greatly retarded by an attack of phlebitis in the left saphenous and both superficial epigastric veins. These vessels became tender, hard, and cord-like to the touch, and there was an erysipelatous blush along their course. The patient, however, recovered from this fresh attack, and gradually convalesced, but had not regained sufficient strength to justify the relaxation of medical supervision till about the middle of April.

THE BOSTON
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SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
December 27, 1879.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	682	1059	20	47	45	3	21	21	8	43·8
Belfast, -	182,082	457	525	—	25	1	1	18	5	12	37·3
Cork, -	91,965	196	307	—	21	36	—	1	7	6	43·3
Limerick, -	44,209	92	100	—	—	—	—	1	3	5	29·5
Derry,	30,884	69	60	—	—	6	—	—	1	—	25·3
Waterford, -	30,626	60	57	—	—	—	—	2	—	1	24·3
Galway, -	19,692	45	42	—	—	—	—	—	2	—	27·8
Sligo, -	17,285	10	19	—	—	—	—	—	1	—	14·3

Remarks.

An excessively high mortality was reported from Dublin, Cork, and Belfast. In Limerick and Galway, also, the death-rate was very high; in Derry and Waterford it was high; in Sligo it was very low. In London the deaths were at the rate of 28·5 per 1,000 of the population annually; in Edinburgh, 22·7; in Glasgow, 28·7; in the Dublin registration district (omitting the deaths of persons admitted into public institutions from outside the district), 42·6; and within the municipal boundary of Dublin, 46·3 per 1,000. It should be mentioned that the mean temperature of the four weeks was 30·6° in London, 33·8° in Edinburgh, and 36·6° in Dublin. Zymotic affections were very rife as well as fatal in Dublin. They caused 210 deaths, compared with an average of 131·5 in the corresponding period of the previous ten years. Measles and whooping-cough have become very prevalent and fatal, smallpox shows little change from preceding four weeks, while fever and scarlatina were less fatal. Of the 21 deaths ascribed to fever, 9 were returned as due to typhus, 10 as due to typhoid, and 2 as due to "simple

continued fever." The epidemic of scarlatina continues to be very severe in Cork. Measles has suddenly become fatally prevalent in that city and in Belfast, as well as in Dublin. Whooping-cough also is epidemic in Belfast. The number of smallpox cases under treatment in the Dublin hospitals appears to be gradually decreasing—on December 27 there were 63 cases, compared with 73 on November 29, and 88 on November 1. Diseases of the organs of respiration were very fatal in Dublin, in consequence of the cold, foggy weather. The deaths were 328, against a ten years' average of 193·2, and included 254 from bronchitis (average = 153·2) and 40 from pneumonia (average = 22·6).

VITAL STATISTICS

Of Eight Large Towns in Ireland, for the Week ending Saturday, January 3, 1880.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	232	262	4	13	15	—	6	3	3	43·3
Belfast, -	182,082	128	126	—	3	—	—	6	3	—	36·0
Cork, -	91,965	51	98	—	8	14	—	1	1	1	55·0
Limerick, -	44,209	24	19	—	—	—	—	—	—	—	22·0
Derry, -	30,884	29	14	—	—	—	—	—	—	—	24·0
Waterford, -	30,626	29	24	—	—	—	—	1	—	2	41·0
Galway, -	19,692	12	11	—	—	—	—	—	—	—	29·0
Sligo, -	17,285	9	6	—	—	—	—	—	—	1	18·0

Remarks.

In this week—the 53rd and last of the year 1879—an excessive mortality prevailed in Cork and Dublin. In Waterford and Belfast also the mortality was very high; in Galway it was high; in the other towns it was moderate or low. In London the death-rate was 31·5 per 1,000 of the population annually; in Glasgow the rate was 22·9, and in Edinburgh 24·2. Omitting the deaths of persons admitted into public institutions from localities outside the registration district, the rate in Dublin was 42·8 per 1,000, being as high as 46·8 within the municipal boundary. Zymotic diseases were rife in Dublin, the deaths referred to them numbering 53, compared with a ten years' average of 32·8. Scarlatina, measles, and whooping-cough were specially fatal. Typhus fever caused

three deaths. Whooping-cough and measles are prevalent in Belfast; scarlatina and measles in Cork. Diseases of the organs of respiration caused 69 deaths in Dublin, compared with a ten years' average of 49·2 in the corresponding week. There were 46 deaths from bronchitis (average = 40·4) and 12 from pneumonia (average = 5·3).

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of December, 1879.

Mean Height of Barometer,	-	-	-	30·217 inches.
Maximal Height of Barometer (on 12th at midnight),				30·717 „
Minimal Height of Barometer (on 30th at 9 a.m.),	-			29·392 „
Mean Dry-bulb Temperature,	-	-	-	37·9°
Mean Wet-bulb Temperature,	-	-	-	36·3°
Mean Dew-point Temperature,	-	-	-	34·1°
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·204 inch.
Mean Humidity,	-	-	-	86·4 per cent.
Highest Temperature in Shade (on 28th),	-			56·6°
Lowest Temperature in Shade (on 5th),	-			21·8°
Lowest Temperature on Grass (Radiation) (on 5th),	-			18·8°
Mean Amount of Cloud,	-	-	-	55·0 per cent.
Rainfall (on 10 days),	-	-	-	1·012 inches.
General Directions of Wind,	-	-	-	S.W. & W.

Remarks.

December, 1879, will long be remembered for the intense cold which prevailed almost throughout the month in central Europe and in England. In Ireland, Scotland, and Scandinavia the latter half of the month was relatively mild, owing to the prevalence of S.W. winds. It is remarkable that the rainfall was generally quite insignificant until the closing days of the month, when frequent rains accompanied the heavy south-westerly gales which ranged over western Europe. During the first week wintry weather of almost unprecedented severity was reported from all parts of Europe—even in central England the thermometer fell to zero of Fahrenheit's scale on the night of the 1st. On the 4th a cyclone crossed France from the Bay of Biscay to Belgium. Snow-storms occurred over the greater part of northern France, and were followed by persistent and intense frost, so that at last the Seine became completely frozen across at Paris. On the morning of the 7th the thermometer was down to zero at Cambridge. From the 8th to the 27th the conditions of atmospherical pressure were nearly constantly anticyclonic, but after the 13th the centre of highest pressure lay well to the S. or S.E. of Ireland and Scotland, where S.W. to W. breezes and milder, softer weather began to prevail. On the 19th, however, a sharp frost occurred in

Dublin, the thermometer not rising above 32° until late at night, when there was a "silver thaw." The anticyclone reached its fullest development on the 23rd, when the barometer stood at 30·8 inches and upwards over Belgium, the N. of France, and the S.E. of England. On Christmas Day a black fog hung over London, producing the darkness of midnight. On the 26th the weather underwent a complete change. A series of deep depressions began to pass rapidly along the western coasts of Europe from S.W. to N.E., and violent S.W. to W. gales with high temperature and copious rainfalls were experienced. On the 30th a sharp thunder-storm passed over the south of England. In Dublin snow or sleet fell on the 1st, 2nd, 3rd, and 30th; hail on the 1st, 3rd, and 30th. Fogs were of very frequent occurrence, being noted on no fewer than 15 days. A solar halo was seen at 9 a.m. of the 2nd. Lunar coronæ were observed on the 22nd, 26th, and 27th.

RAINFALL IN 1879,
At 40, Fitzwilliam-square, West, Dublin.

Month				Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
				Inches	Depth	Date	
January,	-	-	-	1·714	·473	7th	10
February,	-	-	-	3·706	·940	8th	23
March,	-	-	-	1·827	·463	16th	16
April,	-	-	-	1·997	·321	7th	17
May,	-	-	-	2·048	·308	25th	23
June,	-	-	-	4·046	·560	30th	24
July,	-	-	-	4·187	·531	1st	24
August,	-	-	-	3·704	1·615	5th	19
September,	-	-	-	2·046	·610	7th	18
October,	-	-	-	1·320	·594	25th	14
November,	-	-	-	1·251	·368	9th	10
December,	-	-	-	1·012	·239	31st	10
Total,	-	-	-	28·858	—	—	208

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

A NEW METHOD FOR THE PRESERVATION OF ANIMAL AND VEGETABLE SUBSTANCES.

THE following Ministerial Notice was published in the *Berliner klinische Wochenschrift* for 3rd November, 1879 :—"Herr Wickersheimer, Curator of the Anatomico-Zoological Museum of the Royal University of Berlin, has invented a method for the preservation of corpses and plants, or of isolated parts of the same. The inventor having, at my suggestion, renounced his rights under the patent granted to him for Germany, the method is now published for the good of all, and may be employed without restriction. In the patent Herr Wickersheimer describes his method as follows :—I make a solution with which I impregnate preparations in different ways according to their nature and the end I have in view, or else I preserve them in it. The dead bodies of men and animals treated by my method retain their natural shape, colour, and flexibility. Autopsies on these bodies for scientific or legal purposes may be made many years after death. Decomposition and the bad smell resulting from it are completely prevented, and the muscles, upon being cut, present the appearance as in a fresh subject. Preparations made from isolated parts—*e.g.*, ligaments, lungs, bowels, and other soft parts, retain their softness and pliability, so that hollow organs, such as the lungs or bowels, can be inflated. Beetles, crustaceans, worms, &c., remain flexible without removal of the entrails. The colours both of animal and vegetable bodies can be perfectly retained if desired. The fluid is prepared in the following way :—In 3,000 grms. (about 5 pints) of boiling water dissolve 100 grms. ($3\frac{1}{4}$ ozs.) of alum, 25 grms. ($\frac{3}{4}$ oz.) of common salt, 12 grms. (3 drms.) of saltpetre, 60 grms. (2 ozs.) of potash, and 10 grms. ($2\frac{1}{2}$ drms.) of arsenious acid. The solution is allowed to cool and is then filtered. To 10 litres (2 gallons) of this neutral, colourless, and scentless fluid is added 4 litres (7 pints) of glycerin, and 1 litre ($1\frac{3}{4}$ pints) of methylated spirit. In a general way the method of employing this fluid for the preservation of the dead bodies of men and animals and vegetable substances consists in soaking and impregnating the preparations with it. In special cases, however, I proceed differently, according to the nature of the preparations and the use to which they are to be put. If dry preparations be desired the bodies are kept, according to their dimensions, from 6 to 12 days in the fluid, then taken out and dried in the air. Ligaments of skeletons, muscles, crustaceans, beetles, &c., remain then soft and flexible, so that the natural motions may be

imparted to them. Hollow organs, such as the lungs, bowels, &c., are filled with the fluid before the body is immersed in it. After the subject has been taken out of the bath the hollow organs are emptied of the fluid and inflated with air before being dried. Small animals, such as lizards and frogs, or vegetables, are not dried, but put up in the fluid if it be desired to retain their colours. If the bodies of men or animals have to be kept for a long time before being used for scientific purposes it is sufficient to inject them with the fluid, and then I employ, according to the size of the subject, from $2\frac{1}{2}$ pints (two years' old child) to 1 gallon (adult). In these subjects the muscular tissue appears after years as in a fresh body. If injected subjects be kept exposed to the air they lose, it is true, their fresh appearance, the epidermis becoming brown. This, however, can be prevented, if the fluid be rubbed into the outside of the subject, and if the latter then be kept as much as possible from exposure to the air. This last process is to be recommended for corpses which are to be publicly exposed, or which must be kept for a length of time before burial. There is then no smell, and the features of the face and complexion remain unaltered and fresh, instead of presenting the usual repulsive appearance. For genuine embalming I first inject the corpse, then immerse it in the fluid for some days, then dry it, then wrap it up in linen or oilcloth moistened with the fluid, and then place it in a hermetically closed vessel. The treatment in various cases will depend upon circumstances, but the composition of the fluid is the same in all instances." Signed—Von Gossler, Deputy-Minister for Ecclesiastical, Educational, and Medical Affairs.—Berlin, 23rd October, 1879.

CAUSES PROHIBITIVE OF THE FINAL REMOVAL OF THE CANULA AFTER TRACHEOTOMY.

M. CARRIÉ does not propose to pass in review all the causes which may constitute an obstacle to the removal of the canula in the case of a child operated upon by tracheotomy; he limits himself to the study of two varieties of tracheal constriction. The first variety, although relatively rare, has been, however, already demonstrated in a certain number of cases. It arises through the presence of fleshy growths springing from the wound, especially through those deeply-seated upon the borders of the tracheal incision, and which grow in the midst of cicatricial tissue projecting into the air passage after the closure of the cutaneous wound. It was, indeed, a case of this nature, observed with care by M. Carrié during his internate at hospital Ste. Eugénie, that suggested to the author these researches upon the subject. The second variety of tracheal constriction treated by M. Carrié, up to the present time had not been described at all; it had been pointed out to him by his teacher, Prof. Guyon, who had observed it under the following conditions:—A tracheotomised child was seized with a fit of suffocation just as the physician

was attempting to effect a permanent removal of the canula. Examining the depths of the tracheal wound, he perceived a reddish prominence in the interior of the trachea, which was taken for fleshy vegetation of the posterior wall. The child died in a fit of suffocation. Prof. Guyon recognised, upon the *post mortem* specimen sent him, that the projection, regarded during life as vegetation, was formed by the posterior wall of the trachea itself, which was folded longitudinally in its entire thickness. This folding was itself due to the approximation of the posterior extremities of the tracheal rings separated anteriorly for the introduction of the canula. M. Carrié, experimenting with the view of discovering the conditions of the production of this protrusion, concluded that this particular variety of constriction, which hitherto had not been pointed out, ought to be, nevertheless, rather frequent among children. It occurs after the introduction of the canula, and the more readily according as the membranous span which lies between the posterior extremities of the rings is large. It affects chiefly the first three rings of the trachea. The projection which results produces a tracheal constriction that may persist and prove an obstacle to the permanent removal of the canula.—*St. Louis Courier of Medicine*. S. W.

PUERPERAL FEVER

Is invariably treated by Dr. Goodell by intra-uterine injections of a warm two per cent. solution of carbolic acid. Ten-grain doses of quinia are given every four hours until marked cinchonism is produced. Morphia is administered in doses sufficiently large and as frequently as necessary to relieve pain. The whole surface of the abdomen is painted with the compound tincture of iodine, and covered with a large mush-poultice. If it is deemed necessary to open the bowels, large doses of calomel are used.—*N. Y. Med. Record*, 29th Nov., 1879.

NASAL POLYPI.

DR. S. CARO makes known, in a communication to the *N. Y. Med. Record* of Nov. 29, 1879, a painless method of removing nasal polypi employed originally by Dr. G. Ceccarini. It consists in the injection of four or five drops of pure acetic acid by means of a hypodermic syringe into the body of the polypus once only, very seldom twice. The polypus generally drops off within three or five days without discomfort or pain. Disinfecting lotion will correct the offensive odour.

THE TOPICAL USES OF ERGOT.

DR. W. C. DABNEY, in an article in the *American Journal of the Medical Sciences*, July, 1879, calls attention to the local use of ergot in various affections. In chronic conjunctivitis, in which the vessels are enlarged and tortuous, he advises the frequent cleansing of the eye with warm

water, and the instillation, after each washing, of a few drops of the following solution:—Ergot (solid extract), gr. 10; glycerin, 3i.; water, to make 3i. This treatment is less applicable in cases in which there is much pain or intolerance of light. In pterygium the same solution may be used with advantage. In cases of pharyngitis, when the vessels are enlarged and tortuous and there is not much secretion, and in hypertrophy of the tonsils, the following solution should be painted on the parts twice a day:—Ergotin, gr. 20; tincture of iodine, 3i.; glycerin, to make 3i. In cases of cervical metritis, ergot and belladonna may be combined in the following proportions to form pessaries:—Ergotin (or solid extract of ergot), gr. 20; extract of belladonna, gr. 2; cocoa butter, q. s., mix and make into six pessaries; one to be inserted into the vagina every night after using the hot douche. In warm weather these remedies may be dissolved in glycerin and water, as in this formula:—Ergotin, gr. 3; extract of belladonna, gr. 6; water and glycerin, āā 3iv.; mix. A pledget of cotton is to be saturated with this solution, and inserted into the vagina at bed-time, after the hot douche; the cotton should be removed in the morning. Dr. S. Elridge mentions, in the *New York Medical Journal*, October, 1879, several other affections in which the local application of ergot is beneficial. He treated an obstinate case of acne rosacea, occurring on the nose of a young lady, by the use of ergotin, applied during the night upon lint; in three weeks there was much improvement, and in six months no trace of the disease was visible. In another case of the same affection, due to drinking, he injected two or three minims of the following preparation of ergotin into the substance of the skin at intervals of three days, having first softened the tissues as much as possible by several days' continuous poulticing; ergotin, gr. 15; glycerin, min. xxx.; water, 3ii.; thoroughly triturate and strain. No suppuration occurred. Thirty injections were made, and in four months the nose was almost natural in appearance. Dr. Elridge also gives details of some cases of gonorrhœa and granular urethritis which he has treated by ergotin locally, with marked success. The remedy may be introduced into the urethra either by means of the ointment syringe or rubbed into the meshes of a cylindrical hollow lamp-wick, which is supported by a small bougie passed into its centre, this swab being allowed to remain in the urethra for about half an hour. In an old standing case of otitis media, accompanied by destruction of the membrana tympani, large granulations, and profuse discharge, ergotin was applied directly with a camel's hair pencil, after having been diluted with sufficient glycerin to make it flow easily; the result was satisfactory, the granulations having shrunk rapidly, while the discharge disappeared and the sensitiveness abated. The author also suggests that in eczema, vaginal leucorrhœa, and nasal catarrh, the topical application of ergotin should prove of value.—*Lond. Med. Record*, Jan. 15, 1880.

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MEDICAL SCIENCE.

MARCH 1, 1880.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*A Case of Primary Cancer of the Liver, with Remarks.**

By R. C. C. HICKSON, A.B., M.B., and M.D. Univ. Dubl.;
L.K.Q.C.P.; L.R.C.S.I.; Surgeon-Major, Army Medical
Department.

PRIMARY cancer of the liver, although not infrequent in civil life, is rarely met with in military practice, for it occurs at a more advanced age than that at which, as a rule, the soldier becomes non-effective. A case of this disease, however, presented itself in my practice which is in many respects so full of interest that it is considered deserving of publication:—

CASE.—No. 354, Private E. B., thirty-five years of age, thirteen years' service, an officer's servant, reported himself sick from swelling of the abdomen on the 17th November.

He stated he first observed this on the 13th November; it was then slight, and had increased rapidly. He had previously been losing flesh for some time, and had little appetite, but had otherwise felt quite well. Had occasional attacks of diarrhoea, alternating with constipation; complained of thirst, shortness of breath, and flatulence. Had no pain in the hepatic region or elsewhere; habitually drank a good deal of beer and spirits, but without easily becoming intoxicated; generally slept well.

On examination, he had lost nearly all his hair, and looked much older than stated; his features were pinched, his aspect blanched and anæmic, though not sallow, and he was emaciated. The skin was cool, and neither

* Being a Thesis read for the Degree of Doctor of Medicine in the University of Dublin.

dry nor harsh; the respirations shallow, hurried, and exclusively thoracic; the cardiac sounds and pulse normal; the abdomen contrasted in appearance with the rest of the body, and measured $33\frac{3}{4}$ inches in circumference above the umbilicus. The superficial veins of the entire abdomen, and those of the lower part of the thorax, were much enlarged and tortuous. Fluctuation in the abdominal cavity on palpation of its walls was distinct; dulness on percussion was not extensive, and varied with the position of the body, being always in depending situations. The remainder of the abdomen was tympanitic. The upper margin of the liver was on a level with the right nipple; the lower could not be accurately defined, owing to the quantity of effusion, but was ascertained not to be below the line of the costal cartilages. No irregularity of the edge of the gland could be detected. Urine scanty, barely half a pint in the twenty-four hours, of reddish-brown colour, depositing purpurates and phosphates largely; free from albumen; loaded with bile; sp. gr. 1028. Organic disease of the liver was diagnosed, the presumption being that it was cirrhosis. He was put on fish diet, with two eggs, a pint of milk, and 4 oz. gin. As his bowels had not been moved for two days, pulv. jalapæ co., 3 ss., was prescribed; also Baillie's pill, gr. 5, twice daily; and hot fomentations of the abdomen.

On the 20th slight oedema of the ankles was observed, and he had had a sleepless night. Until this date the bowels had not been moved, although a variety of aperients, including enemata, had been employed. However, a bolus, containing calomel, gr. 5, and pulv. jalapæ co., gr. 30, produced at this time one small evacuation of loose (not watery) consistence, pale in colour and almost free from bile. Flatulence had caused much distress, which was mitigated by frictions of the abdomen with warm oil, turpentine stupes, oil of peppermint dropped on sugar and taken internally, the passing into the bowel per anum for some distance of the long enema tube, &c., &c. In order to procure sleep, chloral hydrate, gr. 20; was administered at bed-time.

On the 21st, although he had two hours' sound sleep after the chloral draught, and his breathing was easier, he was found to be weaker. The pulse was more frequent and feeble, the face more pinched, and vomiting had occurred twice in twenty-four hours. He, however, continued to take nourishment well, and his allowance of gin was increased to 3viii. , his eggs to four, and three pints of beef-tea were added, as well as his pint of milk.

On the 22nd the pulse was fuller and stronger, 88 in the minute. There had been no return of the vomiting, and the tension of the abdomen was less. Nevertheless the patient was more depressed, the breathing more hurried, and there was a short, dry cough. Pain over the surface of the abdomen, but chiefly in the hepatic region, was for the first time complained of, and was attended with great restlessness. As

there had been no motion from the bowels for twenty-four hours, the enema assafoetidae of the pharmacopœia was given, and this was followed by two small pale motions.

On the 23rd he was found to be sinking; cough incessant, restlessness increased. Pain continued, and was not affected by moderate pressure; pulse 96, respirations 25. He, however, took nourishment well. In the evening his pulse had gone up to 120, and his respirations to 36.

On the morning of the 24th the pulse was 160 and hardly perceptible, respiration was carried on by the upper intercostals only; he appeared drowsy, but could easily be roused. Made no complaint of pain, and took a little wine or nourishment at intervals. Towards noon the face became cadaveric, and he died from exhaustion about 2 p.m., having retained consciousness to the last.

Autopsy, twenty-one hours after death:—Body much wasted; muscles soft and flabby; very little subcutaneous fat. Thorax.—Heart.—Small, soft, free from fat; valves healthy. Lungs.—Pleuræ non-adherent; old cicatricial mark on surface of left apex; about twenty gray tubercles, the size of millet seeds, scattered through upper lobe of either lung, some of them calcified; remainder of lungs healthy, save for some congestion at either base, probably hypostatic. The abdomen contained two gallons of pinkish serum. There was no general peritonitis. Liver.—Difficult to remove; firmly adherent to diaphragm above—to spleen, stomach, intestines, and right kidney below. Convex surface on a level with fourth rib. Diaphragm thinned by absorption, and not easily separable from hepatic tissue. Weight of organ when cleared of extraneous matters, 8 lbs. 7 oz., and about double the size of health. On the superior convex surface of the right lobe, about its centre, was an out-growth of soft grayish-white medullary substance, about the size of an infant's head at birth, which had been completely covered by the costal cartilages when the liver was *in situ*. The remainder of the upper surface of the gland was studded with nodules one-fourth of an inch to an inch in diameter, of similar medullary cancerous character, the larger flattened at their summits and depressed in their centres. A portion of the surface, two inches wide along the anterior thin edge, was free from these projections, but small nodules were found in the substance of the liver even here. The concave surface presented two large blood-stained fungoid growths, each about two inches in diameter; one sprang from the lobulus quadratus, the other from the centre of the left lobe. The jagged free surfaces of these growths were filled with dark coagula, a mass of which was found between the transverse fissure and the anterior thin edge underlying the organ in its natural position. On section not one cubic inch of the whole liver was found perfectly free from deposit. The stomach, intestines, and mesentery, kidneys, spleen, and pancreas, were all healthy in appearance, and presented *no* trace of morbid growths.

Remarks.—The first point in this case is the fact that until within eight days of his death the man was going about with a liver which may fairly be considered incapable of performing its functions; and that until a day or two before his admission into hospital he had no idea that he had anything serious the matter with him. It is true that, being an officer's servant, he was exempted from nearly all military duty, but still his work was more than he could have performed if he had felt really ill.

The difficulties in the way of accurate diagnosis were very considerable, although the existence of organic disease of the liver was almost certain. It was known that, though the man had escaped convictions for acts of drunkenness, his habits were far from temperate, and this was taken into account in arriving at an opinion.

The appearance of the patient was not that of one suffering from malignant disease, for, though anæmic and emaciated, his skin was neither leaden, sallow, nor waxy in hue, and his features, though pinched, were not extremely so.

His age was also rather against the diagnosis of cancer, and especially may this be said after the condition was demonstrated *post mortem*. Budd, in his work on "Diseases of the Liver," lays down that cancer does not primarily attack the liver before thirty-five years of age; and Frerichs found that of eighty-three cases of cancer in this organ (both primary and secondary), analysed by himself, sixty-one, or more than three-fourths, were aged above forty.

No tumour in the abdomen and no irregularity in the outline of the liver could be discovered, and this, with the absence of pain, of tenderness on pressure in the hepatic region, and of any hereditary tendency, hindered diagnosis.

The freedom from pain is remarkable; it is usually the symptom most felt by the sufferer in every form of cancer. Here, even when questioned as to its existence, no complaint was made until two days before death.

There were other symptoms, too, common enough in this disease, which were also absent—jaundice, for instance, and vomiting, both of which, when they occur, are usually persistent. The former is, however, met with in less than half the cases—according to Frerichs thirty-nine out of ninety-one cases were jaundiced. Vomiting in the subject of this report only occurred twice subsequent to his admission, and there was no previous history of irritability of the stomach.

The ascites presented certain peculiarities. Most authors agree that more or less ascites occurs in cancer of the liver, but that usually the amount of fluid effused is small. In this case it was so considerable that a liver double the normal size was pressed upwards so that its edge could not be felt below the costal cartilages. The great rapidity with which the effusion increased is also noteworthy. From the statement of the man it appears to have attracted attention only five days before he sought admission, and then produced the only symptoms of distress from which he suffered, although his appearance indicated that the cause of the ascites was of some standing.

The duration of the disease in this case is quite uncertain. Taking into account the rapidity of growth of this form of cancer, from nine to twelve months appears a probable estimate.

With regard to the early fatal termination after admission (eight days), I do not think it was influenced by treatment. The strength of the patient was supported to the utmost by nutritious diet, and the remedies employed were mostly palliative. Mercury was given, in small quantities only, as an alterative to aid the action of other drugs in which it is usually effective, and with no intention of producing its specific action on the system, which would have been manifestly injurious. That the drug acted as intended is in a measure shown by the fact that constipation of five days' duration was only relieved when its use, in combination with other purgatives, was resorted to.

As to the nature of the dropsy, I am of opinion it was due essentially to hæmorrhages from the fungoid masses of cancer rather than to the effects of pressure upon the portal vein, or as a consequence of peritoneal inflammation, though probably all these causes were more or less in operation; and I think the absence of general peritonitis, as demonstrated *post mortem*, and the presence and position of coagula, confirm my view that the first-mentioned cause was the most important.

Death was caused by asthenia, hastened by these repeated hæmorrhages; and the marked change for the worse which occurred on the fifth day after admission was probably due to a larger loss of blood than ordinary from the fungoid masses on the under-surface of the liver where the dark coagula were found.

ART. IX.—*Notes of a Case of Spinal Apoplexy, with Remarks.**

By CHARLES A. MACMUNN, B.A., M.D., Univ. Dubl.;
Wolverhampton.

THE comparative rarity of cases like that which I am about to relate, and the special features of interest in the case itself, have induced me to bring it before the notice of the readers of this Journal:—

CASE.—W.D., thirty-two years of age, married, manager of a spirit store, was going into his cellar by means of a ladder, on the 28th of October, 1877, when his feet slipped, and the end of his spine came violently against one of the rungs of the ladder. Besides some transient pain and soreness, no ill effect followed during that evening and the whole of the next day. He did a hard day's work on the 30th, and, feeling rather tired, he lay down on the bed at eight o'clock in the evening, and soon fell asleep. He was presently roused by a most intense pain in the back and abdomen, and a sensation which he compared to being squeezed in a vice; he jumped out of bed, rushed into an adjoining room, and sent for his wife. When she arrived he was sitting in a chair, pressing his abdomen with his hands, and complaining loudly of pain in that situation. The usual treatment was adopted by her—viz., the application of warmth to the abdomen until I arrived.

Half an hour after the seizure I saw the patient. He was then quite free from pain, and sitting in a chair, and he informed me that he was now all right. His face was rather pale, pulse quiet, no tenderness over the abdomen; but on telling him to stand, I found that he could not do so, nor could he stir his legs. A further examination showed that there was complete loss of sensation (in addition to the loss of power of voluntary movement) up to the level of Poupart's ligament on each side, and partial loss of sensation to a line drawn round the body at the level of the umbilicus. I had him removed to bed, and made inquiries as to his previous history, and a more careful examination. Ten years before he had had a chancre, but no secondary symptoms followed; he was the father of a large and healthy family, and his wife had had no miscarriages. He had drunk beer, and occasionally brandy and whisky freely, but not generally to the point of intoxication. The temperature in the axillæ was normal. If he tried to move, pain was felt in the lower part of the back. On tickling the soles of his feet, the legs were drawn up; but if his eyes were not fixed on his feet, he was unconscious of any movement. On passing my hand along the spine, no unevenness could be detected, nor did pressure or the application of a hot sponge cause pain. Even smart percussion was attended by a like result.

* Read before the Wolverhampton Medical Society, February 3, 1880.

Next day (Oct. 31st) his urine was removed by the catheter, and the bowels relieved by an enema. There was a hyperæsthetic spot on the inner aspect of each thigh, and on flipping the skin in the same situation I saw that the cremasteric reflex was unaffected, since the corresponding testicle was retracted. There were occasional spasmodic jerkings of the legs. The urine removed by the catheter night and morning was found to be high-coloured, *intensely acid*; specific gravity, 1020; free from albumen and sugar.

Dr. Johnston, of Birmingham, saw the patient with me next day; he agreed with me in the diagnosis, and put the patient on ten grains of the iodide of potassium, ten of bromide, and fifteen minims of tincture of belladonna, to be given every four hours. He was also ordered a purgative mixture, consisting of aloes, senna, and tincture of capsicum.

On November 3rd the temperature in the left axilla was found to be 98.6° , while in the corresponding groin it was 101.4° ; in the right axilla, 98.5° , and corresponding groin, 100.3° . The convulsive movements of the legs had ceased, the hyperæsthetic points on the thighs had disappeared, but the cremasteric reflex on both sides was normal. There was some tenderness over the dorsal spines; pulse 90; tongue furred. The urine amounted to 610 cubic centimetres in twenty-four hours; its reaction was acid; specific gravity, 1026; and it contained 6.10 grammes of phosphoric acid in twenty-four hours, estimated by means of nitrate of uranium. Although almost blood-red in colour, it failed to give the absorption-bands of blood, and even that of urobilin, which is a rather curious fact, as I always found this substance in high-coloured urine; nor was there any evidence of other bile-pigments when nitric acid was added. The liquid extract of ergot, in thirty-drop doses, was substituted for the belladonna at the request of Dr. Johnston, who again saw the patient in consultation.

On the next day (Nov. 4th) the urine was being expelled in small quantities by involuntary contractions of the bladder, although not more than half a pint could be drawn off when the catheter was passed.

On the 6th of November the right thigh was found œdematous; the calves began to assume a purplish discoloration, which reminded one of *post mortem* staining. The temperature showed the same difference between the axillæ and groins as before, being 98.4° in the right axilla, and 100° in the right groin. The reaction of the urine was then alkaline, and its smell disagreeable.

On the 16th of November, in spite of all precautions, eschars began to form on both nates and over the sacrum.

On the 21st the left heel was found apparently in a state of incipient gangrene, a spot of skin about two inches in diameter being perfectly black and surrounded by a red zone. The urine contained a small

* The Spectroscope in Medicine. P. 167. 1880.

amount of albumen, but it was probably due to admixture of pus from cystitis, which was at this time getting troublesome. There were no tube-casts present.

On the 23rd of November the temperature, which up to that date had been normal in the axillæ, rose to 103° , and the patient was seized with severe and prolonged rigors. The lungs were found quite free from anything abnormal. The eschars were now very large; and small vesicles, filled with brownish fluid, formed on both legs, which, after breaking, left raw spots of skin.

On the 26th of November the temperature was 102° in the right axilla, and 102.4° in the corresponding groin. The gangrenous condition of the heel was exactly as before.

From this date to the 2nd of December the eschars increased rapidly in depth and circumference. One extended from the right buttock to the sacrum, which it laid completely bare, and another over the right trochanter measured six inches by seven. The temperature varied from 100° to 101° in the armpits, and was always from 1° to 2° higher in the groins.

Aphthæ now began to form on the mucous membrane of the mouth; diarrhœa then set in; and the tongue became dry and glazed.

On the 7th of December his mind began to wander, the pulse became daily more feeble, he gradually passed into a state of unconsciousness, and he died on the evening of the 21st of December—nearly two months after the onset of the disease.

The late Dr. Pinnel, House-Physician to the Wolverhampton Hospital, made the *post mortem* examination for me. He found a hæmorrhage into the substance of the cord, in the lumbar enlargement, but it was not possible to localise its exact position on account of the softened and broken-down condition of the cord in its neighbourhood. Below the seat of hæmorrhage the cord was wasted, as well as the nerve-roots proceeding from it. There was evidence of secondary myelitis as high as the mid-dorsal region; but Dr. Pinnel's notes were lost at his death, so that, to my intense regret, I cannot give a more accurate account of the *post mortem* examination. What I have given will, I hope, suffice to show that the hæmorrhage had taken place *into* the cord, and that it preceded the myelitis.

Remarks.—The points to which I should like to direct attention are—(1) the diagnosis, and (2) the physiological bearings of the case.

The diagnosis was from fracture of the vertebræ, which was negatived by the fact that the symptoms did not immediately follow the fall; and an examination of the spine showed that fracture had not taken place; from acute myelitis, which was negatived by the way

in which the disease set in—its great suddenness, the character of the pain, and the absence of certain symptoms which I need not mention; and from embolism of the aorta—a very rare occurrence—by the fact that pulsation in the femorals was present. The acid reaction of the urine is another sign of spinal hæmorrhage as contradistinguished from acute myelitis according to some, and certainly in this case it was acid until secondary myelitis had set in.

The increased temperature in the paralysed limbs, in itself, was an interesting pathological confirmation of the experiment of Nasse, performed in 1832, as he found that section of the cord in the lower animals was followed by a rise of temperature in the hind limbs. Other observers found that the rise of temperature was due to, or at least was accompanied by, an increase of the diameter of the blood-vessels. It was afterwards found that stimulation of the distal end of the cord produced contraction of the blood-vessels and a corresponding fall in temperature. From these facts it was argued that some of the filaments of the vasomotor nerves came from the cord. Whether there are vasomotor nervous centres scattered throughout the cord, or whether there is only one centre in the medulla, is not yet settled, and the present case does not help the matter, since the rise of temperature would only show that the influence of the heat-regulating centre for the lower limbs was cut off by the hæmorrhage from those points below it.

The various nutritive lesions in this case—for example, the œdematous condition of the legs, the formation of vesicles, the incipient gangrene, and the sacral and trochanteric eschars also, showed the extent to which the influence of the trophic centre or centres was affected.

I am inclined to think that the various trophic lesions which occurred were due not so much to “the abolition or suspension of the action of the nervous system,” as to secondary inflammation, as these lesions came on comparatively late; so that this case would tend to support the views of Charcot.*

It is impossible to say whether the lesion destroyed, at first, the whole thickness of the cord or only a part of it—probably a part, since incomplete sections in man are more likely to give rise to irritative action than complete sections—i.e., provided we accept Charcot's views as to irritation.

I am not aware of any well-authenticated account of recovery from spinal apoplexy; there is, however, a case recorded in *The*

* *Diseases of the Nervous System.* Sydenham Society's Translation. 1877.

Medical Times and Gazette,^a where, under the heading "Rare and Anomalous Affections of the Nervous System," the writer says:—"On Monday last we saw another case of extreme rarity—i.e., recovery after apoplexy into the spinal cord. The man says that many years ago he fell down insensible, and when he recovered consciousness, about half an hour afterwards, he found that the whole of his body was completely paralysed, both as to sensation and motion, except above a line drawn round the neck from about the level of the second cervical vertebra. He has gradually recovered, but there still remains sufficient defect of sensation and motor power to confirm his statement of his condition after the fit." As there is nothing further given about this case, of course it is impossible to know whether the diagnosis was correct or not.

Hammond, in his work on "Diseases of the Nervous System,"^b says—"Death is the almost invariable result; I have, however, known two cases of recovery." In one, a boy, aged fifteen, the hæmorrhage was the result of a fall, and for several weeks his life was despaired of, but he eventually *partially* recovered, as he was paraplegic, and had his bladder paralysed five years after the fall. In the other case the patient fell through a hatchway, a distance of thirty feet, and struck on his back. Fifteen years after the fall he came under Dr. Hammond's care, who diagnosed a meningeal spinal hæmorrhage, from the facts that there had been violent jerking of the limbs and intense lumbar pain.

In *The Medical Times and Gazette*^c there is a translation of the notes of a case of apoplexy into the spinal cord, which were given in a paper by Dr. Levier, of Florence, in *L'Imparziale*.^d The patient was a girl, eighteen years of age, who had begun to menstruate three months before the attack, and had menstruated up to a month before its occurrence. She was seized suddenly with a most violent pain in the sacro-lumbar region, and next night she had headache, epistaxis, and increase of the lumbar pain. She was not prevented, however, by the occurrence of these symptoms from walking half a league to see a practitioner.

The pain began on the 18th of April, but it was not until the 24th that paralysis of the lower limbs set in. On the night of that day she perceived, in attempting to get out of bed, that her legs no longer obeyed her will; and, on examination, there was found

^a Vol. II., p. 110. 1861.

^b 1872. 2nd Ed.

^c Vol. II., p. 544. 1865.

^d No. 11. June 1st, 1865.

to be complete loss of power of motion and of sensation in both limbs. There were retention of urine and involuntary fæcal evacuations, but the lumbar pain had disappeared.

She was admitted to hospital on the 9th of May, when, in addition to complete paralysis of voluntary movements and sensation, there was loss of reflex movements. The loss of sensation extended to two fingers' breadth below the *scrobiculus cordis* in front, and reached up to the level of the seventh dorsal vertebra behind. There was no muscular contraction when the strongest induced current was used, and electro-puncture produced a like negative result. There was no feeling of pain along the spine, nor was any elicited on pressure over it. She had at this time a deep eschar over the sacral region, and slight œdema of the legs. There was no abdominal respiration apparent. Intense fever was present, the temperature in the armpits being 40.2° C. The temperature in the inguinal fold was always found higher than in the armpits. Thus, on May 10th, the difference was 1.9° C. It was also noticed that the paralysed parts remained dry, while the upper part of the body was bathed in sweat. It is stated that the urine was alkaline and contained shreds of epithelium, but this was after the catheter had been used a great many times. The patient's intellect remained clear, and the paralysis remained the same during the progress of the case. On May 20th symptoms of pyæmia manifested themselves, and the quantity of urine began to diminish; the sacral and trochanteric regions were laid bare by the eschar. On the 16th of June the lower extremities became covered with extensive ecchymoses, and vesicles filled with sanious fluid formed on the legs; then moist gangrene set in, and the patient died on June 17th—that is, on the fifty-fifth day of her illness.

At the autopsy the cord was found in a condition of gray softening from the tenth dorsal vertebra to the cauda equina. The cord was separated from the membranes by a serous liquid, mixed with the *débris* of medullary substance. On cutting up the cord longitudinally a hæmorrhagic centre, eleven centimetres long and about the breadth of a goose-quill, was found—the spinal cord being softened round this hæmorrhagic centre for a length of twenty centimetres. It was impossible to define accurately the anatomical position of the hæmorrhage on account of the diffuent condition of the spinal marrow, but it appeared to be situated at the posterior part of the circumference of the central gray substance and partly

in the lateral and posterior columns. The rest of the cord appeared healthy, except a spot on a level with the fourth dorsal vertebra, where a circumscribed patch of white softening was found. The microscope showed that the striping of the muscles had disappeared.

The resemblance in the symptoms of this case to those of mine is very striking—in fact, the symptoms are almost identical.

Most English physicians believe that primary hæmorrhage into the spinal cord does not occur—that it is, in fact, in most cases secondary to myelitis; and Charcot, Koster, and Hayem also hold this view. On the other hand, Eichorst^a believes in primary hæmorrhage, and Goltdammer^b also supports this view. The former thinks that myelitis occurs secondarily to the hæmorrhage (a view which my case supports), and that—as in the brain so in the cord—hæmorrhages may be large, or small, or capillary. The large hæmorrhages come on with sudden and severe symptoms, whereas the small ones have a long and dragging course. Eichorst states the particulars of a case in support of his views, in which, strange to relate, the body below the umbilicus sweated, while above it was quite dry—thus presenting a remarkable contrast to the last case in which the opposite condition was noticed, and it also presented another contrast in that the temperature was not higher in the lower limbs than in the upper. Another noticeable feature was the absence of pain from first to last—showing, as Eichorst points out, that this symptom which is commonly relied upon in the diagnosis of spinal apoplexy may be wanting. Although it is generally believed that hæmorrhage into the cord may be diagnosed from hæmorrhage between the membranes and cord, by the presence of convulsive movements in the latter condition, yet Dr. G. Echeverria relates a case^c in which convulsions were severe, and, as well as one can judge, the hæmorrhage was found in the posterior cornua and in the tractus intermedio-lateralis, but then he was only allowed to examine the cervical cord.

Brown-Séquard held, in 1862 (but I cannot say whether he still holds the same opinion), that paraplegia from hæmorrhage into the cord can be diagnosed by its suddenness; pain at the affected part of the spine, with the presence or absence of pain on pressing over the affected part; pains in those parts of the body supplied with

^a Medical Times and Gazette. Vol. I., p. 464. 1876.

^b Virch. Archiv., p. 1. Bd. LXVI.

^c New York Medical Journal for April, 1865.

nerves from the affected portion of the cord, and paralysis of the sphincters from the first.

If the hæmorrhage be outside of the cord he held that the pain is more extended, and tetanic convulsions are present.

In my case slight involuntary jerkings of the limbs took place, and yet the hæmorrhage was into the tissue of the cord.

As to the treatment—if one were certain that hæmorrhage had not taken place, I have no doubt ice to the spine might be of service, combined with the administration of ergot, but once hæmorrhage has taken place I imagine treatment is useless.

ART. X.—*A Case of Osseous Ankylosis of the Knee, operated on by Barton's Method.* By MALACHY J. KILGARRIFF, F.R.C.S.I., M.R.I.A.; Surgeon to the Mater Misericordiæ Hospital, Dublin; formerly Surgeon to Jervis-street Hospital.

IN faulty ankylosis of the knee, when the angle at the joint approaches or reaches that of a right angle, the crippled limb is useless in locomotion, and not merely useless, but becomes a serious impediment and troublesome burden.

While practical surgeons are thoroughly familiar with the usual operations suitable to such cases, it occurred to me that the heroic proceeding devised by Dr. John Rhea Barton in 1826, and afterwards successfully executed in 1838 by Professor Gibson, and repeated by a few other surgeons, has been lost sight of in this country, and to all intents and purposes has become obsolete.

Having myself performed the operation, and being forcibly impressed with the splendid success which resulted, and believing the procedure to be applicable to numbers of cripples left unrelieved and thought to be beyond the reach of surgery, I have deemed it my duty to publish this case:—

CASE.—M. H., aged thirty, unmarried, the subject of faulty bony ankylosis of the knee, was admitted into Jervis-street Hospital on the 4th Sept., 1877, having been advised by my friend, Dr. Burton Jackson, of Milford Causeway, Tralee, to place herself under my care. Fifteen months previous to admission a fowling piece, in her master's hands, accidentally exploded, the charge shattering the front and sides of her left knee, carrying away the patella and fragments of the femur and tibia. Amputation through the thigh was proposed by the surgeons summoned to her aid, but to this measure she resolutely refused to submit. The injured

part was then attended to, and healed after many weary months of suffering. She soon improved in health and strength, but, being unable to walk, owing to the faulty position which the leg had acquired, she was sent to Jervis-street Hospital, to be treated by me.

On examination I found the leg bent at a right angle, the knee immovable, the anterior and lateral aspects being rough and irregular, and covered with a thin slate-coloured cicatrix. With the aid of crutches she could move forwards slowly, but awkwardly—the weight and position of her crippled leg considerably retarding her progress. The deformity is faithfully depicted in Plate I.

Resection of the joint I considered inadmissible, there being no skin left to cover the wound which I should have to inflict. I therefore proposed Barton's operation, and the proposal had the full concurrence of my colleagues. Professor Gibson, and others who imitated and followed him, cut from the lower portion of the femur a wedge, the base being in front, the thin plate left untouched behind being subsequently fractured in the act of extension. A triangular flap was made of the soft parts in front of the limb, consisting of the integument and the extensor muscles, the lower incision being close to the patella, the base of the flap being to the *inside*.

The patient—who placed herself unreservedly in my hands—was in vigorous health, plump, and strong, endowed with high courage and strong hope, and in excellent condition of mind and body to pass favourably through the ordeal of a serious operation.

On the 16th September, assisted by my colleagues, I proceeded to operate. Dr. MacSwiney having administered ether, I cut on the lower portion of the thigh a triangular flap, with the base on the *outside*, exposing the femur. I then passed carefully under the bone a curved metallic spatula, and with a saw removed a wedge-shaped piece, which had its base in front, and measuring vertically three-quarters of an inch. The dotted lines in Plate II. indicate the direction of the incisions. The piece of bone removed is represented in the drawings full size. I then straightened the limb without difficulty and placed it in a splint made to my order by Messrs. O'Neill and Thompson, of Henry-street. The outside piece of the splint, like Liston's, reached the axilla, while the inner part fell short of the groin, the lower portion of the apparatus being a box, the thigh part joining that which supported the leg at a *very obtuse angle*. There was on the outside a hinged piece corresponding to the knee, so as to enable the wound to be seen and dressed without disturbing the limb. The dressing, which was applied daily, consisted of lint saturated with carbolic oil, a weak solution of permanganate of potash being also squirted into and on the part to correct the foetor and prevent septicæmia. She suffered for some days from sickness of stomach, but this complication was successfully met by Schacht's solution of bismuth with prussic acid.

The wound suppurated for a few weeks, then closed in, and the divided surfaces of the bone were early united by a firm osseous bond.

In somewhat less than three months she was able to lean on the leg, and, aided by crutches, she could without difficulty walk about the ward. From this onward her progress was continuous and satisfactory; and she was daily paraded for walking exercise before the students, who marked with evident satisfaction her steady improvement. The leg and thigh not being in the same straight line, but meeting at a very obtuse angle, salient anteriorly, she had the advantage of the spring of the foot, which imparted to her gait an elasticity that was truly surprising.

My operation differed from Barton's in two particulars: he left the posterior portion of the bone uncut by the saw—I effected its complete severance; the base of his flap was on the inside—mine on the outside.

By cutting quite through the bone, I left no spiculæ to pierce the fascia behind, thus preventing the passage of pus to the popliteal space, and, having the base of the flap on the outside, averted the possibility of the bagging of matter, and made the wound more accessible for dressing.

Plate II. shows the result of the operation on her limb, the sketch having been made just prior to her return home.

There was no shortening, or, if any, not more than the tenth of an inch.

She is now strong and robust, able to discharge her domestic duties free from lameness or pain, and as favourably circumstanced as the most enthusiastic advocate of Barton's operation could desire.

ART. XI.—*A Boot which allows Walking and Maintains the Foot in good position during the Treatment of Equino-Varus.* By R. L. SWAN, Fellow and Member of Surgical Court of Examiners, R.C.S.I.

ONE of the most important considerations in the treatment of club-foot is (while stretching abnormally contracted structures) the restoration of the tonicity of over-extended muscular tissues, and their development, as well as that of the entire limb. An indulgence of the patient in exercise of the disused muscles during treatment, is a powerful element in the fulfilment of those ends. Nevertheless, unless what is gained in the restoration of symmetry be maintained, a rapid recurrence of deformity is inevitable. In most cases, then, Mr. Barwell's appliance is truly

valuable. Practically it will be found that in the treatment of equino-varus there are certain objections to this method. These may be briefly classed under three heads:—

1st. Difficulty of keeping the toes abducted, especially if the tendo Achillis be divided before the varus is cured.

2nd. Impossibility of keeping up daily manipulation, or galvanism, as may be desirable.

3rd. The pressure of the necessary bandages on the entire limb, which is a positive hindrance to its development.

An appliance to fulfil the following requirements would therefore be useful:—To keep the posterior segment of the foot firmly fixed with the heel well down; to abduct, as might be necessary, that portion of the foot which is abnormally deviated in rotary varus—namely, that anterior to the articulation between the calcis and astragalus, cuboid and scaphoid; to allow of wear and tear without breakage, which is the invariable result of the strain on any appliance for progression, used on an imperfectly-cured club-foot.

I have found the boot here described to serve those purposes in repeated instances. It is composed of a laced leather anklet which covers and fixes the tarsus, leaving the toes and front of the foot free. There are two stems and ankle-joints to prevent undue strain. From the outer a spur, moved at pleasure from a universal joint worked by a key, acts on the anterior segment of the foot by a toe-strap.

The boot is manufactured for me by Messrs. M'Adam and Corcoran, 22, Bachelors'-walk.

BALSAM OF PERU IN PRURITUS.

IN a communication to the *Deutsche med. Wochen.*, No. 34, Dr. Auerbach, of Berlin, states that having, in common with so many other practitioners, found the balsam of Peru a most valuable remedy in itch, he has for some time past used it in the treatment of pruritus with the greatest success. After the first rubbing into the part affected, great relief is obtained, and in a few days a cure results. He relates a very obstinate case which, after resisting all kinds of treatment for years, was speedily cured by the balsam.—*The Medical News and Library*, Dec., 1879, and *N. Y. Med. Record*, Jan. 17, 1880.

THE DOCTOR'S
SOCIETY FOR
MEDICAL
OBSERVATION

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Ocular Therapeutics. By L. DE WECKER, Professor of Clinical Ophthalmology, Paris. Translated and edited by LITTON FORBES, M.A., M.D., F.R.G.S.; late Clinical Assistant, Royal London Ophthalmic Hospital. London: Smith, Elder, & Co. 1879. 8vo. Pp. 552.

WE do not exaggerate the importance of this work when we assert that it marks an era in ophthalmological science. The classical treatise of the late Soelberg Wells, and the practical manual of Brudenell Carter, represented, perhaps best of any books in the English language, the practice and views of British ophthalmologists. But the rapid advance in this special field, especially on the Continent, within the past few years, renders the appearance of this translation of Dr. Forbes' peculiarly opportune. The lectures were delivered in 1877-78 to the students and practitioners who attended the clinique of Dr. de Wecker in Paris; and this is one of the peculiar attractions of this work, that it is written with a terseness and perspicuity which render it easy of comprehension to the general practitioner, while it must prove of equal utility to the special worker, dealing as it does with many of the questions of practical interest which have agitated the minds of ophthalmic surgeons for some time past; and this value is heightened when we remember the undoubted genius of the author, his great operative skill, his vast experience, and the many advances in the treatment of eye affections which have undoubtedly had their source in the originality and inventive power of Dr. de Wecker. Coming from such a pen, carefully revised and condensed, these lectures will be read with avidity by all workers in this branch of surgery, and hence it is not a matter for surprise that already they have been translated into Italian and Spanish, and are about to be issued in Germany. There are forty-eight lectures, divided under these heads:—Diseases of the eyelids, five; diseases of the conjunctiva, six; affections of the sclerotic, seven; diseases of the cornea, five; diseases of the vitreous, one; diseases of the retina, four; affections of the optic nerve, three;

affections of the muscles, four; affections of the orbit, one; affections of the lachrymal passages, two; refraction and accommodation, one. Each chapter is preceded by a sketch of the anatomy of the part treated of in it. The morbid anatomy embraces all the most recent views on the structure and relations of the different tissues and the important connexions of the several coats of the eye—the morbid changes occurring in each being succinctly and lucidly demonstrated without any of that verbose phraseology which obscures the descriptions of other authors, and renders them unintelligible to the general reader. In the chapters on the eyelids, we find special stress laid on various points, too frequently neglected in practice, as the free opening of any collection of pus in cellulitis. The neglect of early and free evacuation leads to subsequent ugly disfigurement, contractions, adhesions, or periostial complications.

And here early in the work we notice, as all through it, the value the author places on disinfectant applications in subduing or modifying conjunctival inflammations. Weak solutions of carbolic acid, boracic acid, hydrochlorate of quinine, &c., are constantly recommended. This agrees with our own experience—a preparation which we are particularly fond of being the sulpho-carbolate of zinc.

A form of plaster, termed Vigo plaster (*emplâtre Vigo*), the formula for which is given (page 5), a mercurial preparation, is advised in erysipelas, as also for strapping in variola if the lids are threatened with pustules. The management of the eyelids in blepharitis is fully entered into. The author's "pommade anti-blépharitique" is advised in hypertrophic blepharitis; it consists of litharge plaster, linseed oil, of each 20 parts, balsam of Peru, 1 part (it must be often renewed). Small discs of calico, the shape of spectacle glasses, are smeared with the ointment, and the eyes covered up with them during the night. He also recommends puncturing the lids in the hypertrophied portion with a tattooing needle, and applying on the punctured part a concentrated solution of nitrate of silver. This we have been in the habit of doing after depilation. It would seem superfluous now-a-days to insist on the use of salt and water after the use of any strong nitrate of silver solution, but, even yet, one occasionally sees in permanent disfigurement the direful effects of neglect of this simple precaution, or of employing running water to wash over the conjunctiva finally with. The danger of kissing is pointed out, in view of any chance of specific taint. In secondary ulceration, spray of corrosive sublimate (1-2,000), and also subcutaneous injection of pilocarpine (5 minims of a 10 per cent. aqueous

solution of the hydrochlorate), and enemata of iodide of potassium are advised. The chlorate of potassium application (Bergeron) to epithelioma of the eyelid is highly spoken of. In a case now under observation, as in past ones, the disease has been arrested by the ablation of the growth superficially, and the application of a caustic potash paste (made of flour) to the raw surface, or a paste composed of talc powder and chloride of zinc is excellent. We do not find it so difficult to limit the effects. The treatment of that troublesome affection, "convulsive facial tic," is shown to be empirically aided by ascertaining the spots of pressure on the nerve, when the pain is arrested. This at least assists to mark the nerve to be divided, whether the supra- or infra-orbital. The continuous current has served the negative pole placed over the orbicularis, and the positive over the fifth cervical vertebra, corresponding to the middle ganglion of the sympathetic. "Incision of the commissure" we have found the most efficacious means of treating inflammatory blepharospasm; the author speaks highly of the internal administration of eserine ($\frac{1}{80}$ to $\frac{1}{3}$ grains) daily if nausea does not contraindicate its continuance. He rightly enters his protest against all disfiguring operations on the lids in cases of perverted growths of cilia, trichiasis, &c.—operations which very frequently leave the patient in a worse state than he was in previously, from irritation produced by the sharp edges of mutilated eyelids. For our own part, though this method is not mentioned by the author, we get the best results in cases of ectropion by means of Berlin's plan of dissecting out an oval piece of cartilage, removing in most cases a portion of integument and using sutures. The author speaks highly of the use of Gaillard's sutures, and of a combination of Snellen's and Streatfield's methods in ectropion. Some years since we published the particulars of a case where a piece of stick lay embedded under the upper palpebral fold for over a year, and was discovered in consequence of the child being brought to hospital for the chronic irritation caused by the foreign body. A hard substance was felt and cut down on, when a piece of stick, about one inch and a half long, was extracted. The author quotes a case somewhat similar, and most important is the advice that in all cases of suddenly occurring irritation the lid and upper palpebral fold should be searched for foreign bodies carefully. Every ophthalmic surgeon must have seen scores of instances in which foreign bodies were the undetected or unsuspected sources of inflammation of the conjunctiva or cornea.

Dr. de Wecker contrasts favourably the plan of tarsoraphia with

skin-grafting and blepharoplasty in certain forms of ectropion, and in the deformity which attends on a severe burn. "There can," he says, "be no doubt that it is along this path of conservative surgery that every practitioner—who, when he cannot benefit his patient would fain not injure him—would prefer to travel." Nevertheless we have had some splendid and unlooked-for good results after blepharoplasty. In the chapter on catarrhal inflammation of the conjunctiva, the author cautions against the imprudence of giving to patients for their own use collyria of nitrate of silver; the reasons are obvious. So also the influence on treatment which small ulcers or abrasions on the cornea exert, and the great value of incising the canaliculus where there are epiphoral states complicating the conjunctivitis is shown. It is amazing how, even yet, practitioners will adhere to the use of powerful caustics and acetate of lead solution in inflammatory states, not even taking the pains to wash off and neutralise the former, and forgetting the staining effect of the latter. It is true of acute inflammation of the eye, as of the skin, that the essential principle of all treatment must be to obtain rest to the organ by soothing remedies. Every principle of sound treatment is set at nought if this golden rule is forgotten or broken. In referring to gonorrhœal conjunctivitis, Dr. de Wecker makes the important statement that "one-half of all eyes attacked by gonorrhœal ophthalmia are lost, scarcely one-third of those attacked by purulent [ophthalmia]." Without entering fully into his views we may remark that the plan of treatment most approved of by Dr. de Wecker may be summed up thus—cleanliness insured in every possible manner, disinfectants, the use of eserine, and mild nitrate applications. He does not approve of the solid nitrate of silver. This does not, however, accord with our experience. There can be no doubt of the great value of eserine in these cases, especially when we have corneal and iritic complications. But the first essential is *cleanliness*, constantly seen to day and night, secured principally by the employment of disinfectant washes.

Lecture VIII. is devoted to the consideration of croupal conjunctivitis, diphtheritic ophthalmia, and phlyctenular conjunctivitis. As in England, so in France, diphtheritic inflammation is a very rare affection. We have seen but one case of it out of a very large clinique for years. The importance of protecting the sound eye; the caution to be exercised in the use of cold; the value, in certain cases of purulent conjunctivitis tending to a diphtheritic type, of the use of iced com-

presses, *from the first*, is insisted on; also the use of salicylic acid (1-10) as a topical application. To cut short the period of infectious infiltration the author recommends mercurial inunction. Arteriotomy, eserine, and sclerotomy, are of use to relieve the tension. The incompatibility of calomel, used in the dry form for the insufflation to the eye in phlyctenulæ of the conjunctiva, with the internal administration of iodide of potassium, is noticed, a biniodide being formed. Pagenstecher's ointment, of one part of binoxide to eight of cold cream, is advised as a substitute for the calomel at times. The author employs a camel's hair pencil to dust the calomel powder on the eye. We have for a long time preferred the use of a quill fixed in the end of a rubber tube about one foot long; a little powder is taken up on the quill and blown in either by the patient himself or a friend. Children often thus get to insufflate their own eyes. The ointment of Pagenstecher should be used with caution. We seldom employ so strong an irritant in phlyctenular inflammation; certainly the caution not to entrust it to a patient unless largely diluted is not amiss. The danger on the part of the medical practitioner is rather to use too stimulating and too irritating remedies in this affection, forgetting the constitutional origin of the disease, and frequently precipitating the mischief by irritants and insufflation. We can speak most highly of the value of eserine in this troublesome complaint. It often acts in a magical manner. We quite agree that "the sovereign remedy" in the accompanying blepharospasm is section of the external palpebral ligament. Though immersion has succeeded with us, yet we, as a rule, disapprove of it. Though not spoken of, save in the way of "tincture of iodine applied round the orbit," yet we must look on iodine pigment (iodine 3i., mastich 3i., rectified spt. 3i.) painted carefully all round the palpebral portion of the orbicularis, and renewed at intervals, as a most efficacious remedy in certain cases. So a slight eschar on the upper lid, produced by the application of the solid nitrate of silver, has relieved where everything else has failed.

In Lectures IX. and X. granulations and some of their effects are studied. The mingling of the neoplastic growths with healthy structures is insisted on—a fact too often forgotten in the barbarous attempts so frequently made to destroy the former while the latter are the principal sufferers. Words forcible enough can hardly be found to condemn the practice in vogue for the management of this commonly occurring affection, mere physiological deviations being confounded with morbid growths, both being included in the heroic

treatment adopted—everything is forgotten in the rash haste to effect a cure.

The dependence of this most troublesome conjunctivitis on defective hygiene, contagion, irritants, as tobacco smoke, abuse of the eye in prolonged work, more particularly at night, where there is faulty refraction, cannot be too strongly urged on the notice of general practitioners. In syphilitic affections of the conjunctiva, as in those of other structures, Dr. de Wecker speaks highly of the "syrup of Gibert," of which he gives a dose, containing $\frac{1}{6}$ th of a grain of biniodide of mercury and 8 grains of iodide of potassium. We may here remark, in common with him, how rarely is the cysticercus seen in this country. We are not aware of a case having been recorded in Ireland. We have not seen the entozoon in our clinique.

Lectures XII. to XVI. deal with diseases of the cornea. In referring to the pathology of inflammation of the cornea, the author holds that "an absolutely passive part must be attributed to the corneal tissue in the process of inflammation," and that "all the teachings of clinical ophthalmology perfectly accord with the notion that, within the border of the cornea, inflammation must be considered only as nutrition in excess—that is to say, acceleration of all cell migration and of the stages of retrogressive metamorphoses of the fixed elements." He then distinguishes three types of corneal inflammation—infiltration, abscess, corneal ulcer; further on he subdivides all inflammations of the cornea into superficial and deep, and the former into vascular and non-vascular. Superficial vascular corneitis he discusses under the heads of phlyctenular keratitis, pannus of the cornea, abrasions. In the directions for the management of the phlyctenular variety, he says:—"Be careful not to violate either of the three following conditions—viz., rest to the affected eye, scrupulous cleanliness, abstention from all revulsive and weakening treatment." To that well-known form of corneal infiltration which is raised above the cornea, and in which a group of vessels passes to feed it, the vessels themselves resting upon a gray raised infiltration, he applies the term "keratitis en bandelette." Following out his views of the inter-dependence of the filtrating channels in the trabecular tissue outside the cornea and the state of tension of the globe, he points out the manner in which pannus interferes with these filtrations, giving rise to glaucomatous phenomena. Hence the danger, now ascertained, of employing atropine in these states rather than eserine. Among the methods

advised for treating pannus and preventing sclerosis, he mentions abrasion of the conjunctiva, iridectomy, and sclerotomy.

It is better to describe the first and third of these procedures in the author's own words. He does not, in abrasion of the cornea, follow the precise directions of Furnari:—"I take hold of the conjunctiva with my forceps half a centimetre above the margin of the cornea, and pass one blade of the scissors quickly under the mucous membrane, cutting a strip of the conjunctiva half a centimetre wide all round the cornea. This circumcision completed, I cut at one sweep above the vertical diameter of the cornea up to its margin, the portion of the conjunctiva grasped in the forceps." He detaches this band very carefully from around the cornea, and separates it from the sclerotic. He neither scrapes the episcleral tissue nor does he use nitrate of silver.

Cold and warm compresses are subsequently used. In regard to sclerotomy he says:—

"I perform sclerotomy with a sclerotome, made on purpose. It is a lance-shaped knife, three millimetres in breadth. The sclerotome traverses the eye at one millimetre from the edge of the cornea, and at three millimetres from a point corresponding to its vertical diameter, towards its superior or inferior extremity, the instrument being kept exactly parallel to the iris. The knife, as soon as it has appeared on the opposite side, is to be quickly withdrawn, so as not to allow the escape of any aqueous humour, or give rise to any entanglement of the iris. Eserine will prevent this."

To non-vascular ulcer of the cornea he applies the term "ulcer by absorption;" warm fomentations, eserine, and compresses, are the means advised. In these non-vascular states insufflation of calomel and the use of the red ophthalmic ointment—neither being pushed too far—are of service. In deep-indolent infiltration he speaks highly of the subcutaneous injection of pilocarpine, sclerotomy, and eserine. It is, the author says, clearly made out by statistics that in two-thirds of the cases of diffuse (interstitial) keratitis, occurring in childhood and youth, "syphilis is the origin of the affection. It is marvellous how clearing of the corneal cement and the restoration of the pupil can be effected by the judicious and early handling of these cases. Bichloride of mercury at first, followed by iodide of potassium, with bark and cod-liver oil, and, later on, iodide of iron, the steady use of atropine, while keeping a seton in the temple, is, we find, the most effective treatment. Warm fomentations are, as a rule, indicated. There can be no question that all Dr. de Wecker

writes on behalf of eserine in large abscesses of the cornea is true. Our experience is quite in accord with the statement that "we are," by its means, "able to save eyes, which formerly would have recovered, if at all, only with a more or less considerable staphyloma—a condition which would have left scarcely any hope of a restoration of vision." In an extreme epidemic of variola, in about 1,600 cases passing directly or indirectly under our observation, we saw only two instances of variolous abscess. Special care was taken of the eye. In referring to sthenic ulcers, Dr. de Wecker says:—"The foundation of all treatment is rest;" and the means he uses to obtain this are—compress bandage, eserine, and paracentesis. This must be the opinion of every experienced special surgeon, and it were well that those simple steps were followed in general practice. In central ulcer we use atropine or duboisine, when the danger of perforation is great—reverting to eserine, after forty-eight hours from the performance of the paracentesis, when the aqueous is resecreted. Eserine is, however, preferable in all forms of peripheral ulcer. The relation between dacryocystitis and rodent ulcer is noticed, the infectious character of the discharge and the fungi present explaining this.

Scemisch's operation of slitting up the ulcer from behind forwards, and evacuating the pus generally present in the anterior chamber, is justly referred to as one of the most brilliant triumphs of ocular therapeutics:—"Having placed the speculum in position, a puncture with a narrow Graefe's knife is to be made near the external border of the ulcer; then the knife is to be passed gently into the anterior chamber, under the thin floor of the ulcer; a counter-puncture is to be made near the external border, and the inner border divided." M. Scemisch conceives that the operation loses its certainty of action if the incision has to equal or exceed the length of the radius of the cornea. We have just had a splendid result from Scemisch's operation, and the subsequent instillation of eserine, in a case of suppuration of the cornea. Dr. de Wecker has, of late, had recourse to sclerotomy in rodent ulcer, with suppuration. The relation of opacities of the cornea to glaucoma, by interfering with the eliminative lymph canals near the iritic angle, is considered. Abrasions of the cornea for such, save in the case of calcareous crusts, are now quite abandoned.

The efforts of Power, de Hippel, and Dürr, to graft from animals, or from an eye just enucleated, a flap of corneal tissue to replace the portion of corneal cicatrix removed, are alluded to. The

trephine necessary for the purpose is figured. This has been done with a fair degree of success. "The first attempts," Dr. de Wecker tells us, "in the direction of altering the colour of corneal opacities, were made in his clinique in the year 1869." We have never had any bad results from tattooing. The indirect advantages it confers in preventing the diffusion of light, and, by the antiphlogistic action of the tattooing process, in making cicatrices more resistant, obliterating the vessels, and rendering the cornea less prone to cicatricial keratitis, is pointed out.

Lecture XVII. is devoted to diseases of the sclerotic. The all-important connexions and communications between the iris, ciliary body, ciliary muscle, cornea, and sclerotic, are viewed in relation to inflammation of their region. The spaces called the canals of Schlemm and Fontana are regarded as the filtrating media for relief of the vitreous and aqueous humours respectively, and as the communicating channels between the lymphatic and venous currents in the eye. These canals are of the utmost importance in preserving the normal state of tension of the globe, as, dependent on their patency or obliteration, the intra-ocular fluids and the circulatory currents will be preserved in a relative state of equilibrium, or the eye will suffer from over-distension and intra-ocular pressure. On the normal state of the iritic angle, then, where these various structures meet, depends the freedom of the globe from glaucomatous tendencies, and on our knowledge of the pathological changes here occurring are based the operations of sclerotomy and iridectomy, the object of these operations being to restore the balance between intra-ocular secretion and excretion re-establishing filtration (*vide* pages 270, 271).

For rheumatic scleritis the author relies principally on the subcutaneous injection of pilocarpine, pushing it to free diaphoresis, together with iodide of potassium, both by mouth and enemata. The importance of carefully exploring the upper *cul-de-sac* for the presence of any foreign bodies is insisted on. The whole of the remarks on the removal of foreign bodies, and on other accidents to the eyeball, are invaluable to practitioners. Of the numerous accidents constantly coming under observation, the following was one of the most remarkable we have met with for some time, and the complete recovery from which is worth recording:—

A little girl was standing by her brother at the side of a stream when trout fishing; in some way the hook, while making a cast, was stuck in the eyeball, passing through the cornea just at the

sclero-corneal junction, the barbed end barely appearing through the sclerotic.

Suggestions were made at the time to pull it through, which, fortunately, were not acted on. The child was driven by a medical man a long distance to us, and, when seen at night, the eye presented a most unfavourable appearance, the gut hanging from between the eyelids—on separating which gently, with a speculum, we saw the hook as above described. The child was placed under chloroform beneath a strong light. Two needle-holders of Wecker's secured and steadied the extremities of the hook, the barbed end being pushed fairly, but cautiously, through the sclerotic. With a nippers for cutting hare-lip pins (the holders being entrusted to an assistant), the barbed end was steadily cut off without any bruising of the parts; the other end then was withdrawn. The child returned home in a week without the least appearance of a wound, and completely recovered, her vision being perfect.

In the chapter on iritis, Dr. de Wecker remarks that "syphilis is the cause of from 60 to 70 per cent. of all cases of iritis," and the remainder, he says, may be accounted for by a rheumatic or arthritic diathesis.

The value of atropine as a mydriatic in soothing pain, protecting the iris from adhesions, and placing the eye in a state of rest, all are cognisant of, though, strange to say, even yet, from ignorance or carelessness, eyes are frequently lost, or permanently injured, from its inefficient employment. The soothing effect of paracentesis in iritis, especially if the tension is increased, is not sufficiently known. Dr. de Wecker performs this operation with a stop-needle. There can be no question of the relief it affords. The new alkaloid, duboisine, has been largely employed by us as a substitute for atropine.

The author says:—"What I can affirm is that the eyes, which used to be irritated by the smallest instillations of atropine, now bear excellently a solution of neutral sulphate of duboisine." As we have elsewhere stated, we have proved the truth of this statement, so we have found it at times more efficacious in its mydriatic effects, succeeding where atropine has failed. We have had no unpleasant results, though these have been complained of by others in the shape of delirium, &c.

The imprudence of too great haste in performing an operation for artificial pupil, after iritis, is referred to, the time to operate being during a "period of complete calm, and after the patient has

undergone a course of treatment directed against the constitutional diathesis."

Lecture XX. treats of sympathetic irido-choroiditis, wounds of the iris, &c. Irido-choroiditis, changing to "adhesive and retractile," is the commencing lesion in a large number of cases of sympathetic inflammations. Wounds invading the ciliary region of an eyeball are, as has been long known, specially dangerous in this respect. They occur in the "filtrating zone." So, also, "spontaneous intra-ocular inflammations," causing "contraction of new tissue," "may exert as baneful an influence as any wound." Surgical intervention at times is of itself sufficient to cause it. The special period of danger, Dr. de Wecker thinks, is the five weeks following the first week after the injury; there is no danger of sympathetic inflammation during the first week. "After twenty-six years he has seen an eye become a menace to its fellow-one." We have ourselves seen sympathetic mischief set up after so long periods that all thought of any such contingency had passed away.

This is one of those results which may bring temporary odium on a prudent surgeon who advises removal of a dangerous eyeball, foreseeing the consequences, when, for some few years after an injury, it so occurs that no ill consequences follow, as from gunshot wounds—penetrating wounds of any nature—where no foreign body is in the globe, or in atrophic conditions, the result of disease. The wearing of an artificial eye, Dr. de Wecker tells us, "may wake the dormant tendency," and hence it is often more prudent that the wearing of a shell be abandoned. This applies more particularly to the labouring classes. The ignorance or timidity which accepts the responsibility of allowing a dangerous and often sightless eyeball to remain rather than take the responsibility of removal, is much to be deplored, and still, unfortunately, we find the mistake only too prevalent, even amongst otherwise well-informed surgeons.

Besides the emphatic opinion which he gives as to the disastrous consequences which arise, both immediate and remote, from an expectant treatment, inducing delay in enucleation when there is the slightest suspicion of danger to the other eye, Dr. de Wecker, with equal force, insists on the imprudence of any interference with an eye in which sympathetic symptoms have once appeared. He quotes Mr. Crichton's opinion on this point.

Mercurial treatment and subcutaneous injections of pilocarpine are the means specially advised. In certain cases of mydriasis, where myotics fail, the use of Trouve's two-celled battery at night

is recommended, "the positive pole being placed, by means of a binder, over the closed lids; the negative on the back of the neck."

It is well in all cases of mydriasis following an injury to examine carefully the position of the crystalline lens. In a case recently sent to us, in which myotics had been used without effect for mydriasis, coming on after a slight blow on the ball, the lens was found, on oblique illumination, slightly tilted forward on its axis.

Lectures XXI., XXII., XXIII., are taken up with the study of choroidal diseases. The interesting fact is noticed that in myopes the radiating portion of the ciliary muscle (that of Brücke) is more developed, while in hypermetropes the circular (that of Müller) is—in the one case accommodation is relaxed, in the other it is put on the strain. The insidious manner in which sclerochoroiditis, with recurrent attacks, proceeds to destruction of vision, is unfortunately not generally recognised, nor, indeed, is the affection itself, in general practice. Episcleritis and anterior sclero-choroiditis are permitted to increase and extend before special assistance is sought, when it is too late either for iridectomy or artificial pupil. Adhesion of the iris, alteration in its structure, atrophic changes in the cornea, and ciliary staphylomata, have long since occurred, leaving little hope from operative means or any treatment. Indeed it is not uncommon to see these cases when even the use of atropine has not been resorted to. The mechanical causes of posterior staphyloma (sclerochoroiditis posterior) are divided by the author under three heads. These are briefly:—(a) congenital weakness of the sclerotic immediately around the optic nerve, with absence of choroid; abnormal insertion of the nerve sheaths; abnormalities in the venous vessels; (b) abnormal action of the rectal muscles; and (c) prolonged tension of the ciliary muscle. It must, however, be remembered that there may be extreme myopia without staphyloma, and that staphyloma may exist in eyes with perfectly normal vision. In one case (of which we had a drawing made at the time) we found a well-marked crescent above the optic discs in both eyes—the only case of the kind we have ever seen.

In noticing the resistance offered by the sclerotic to foreign bodies driven against it, the case of a gunshot wound is cited, in which the grain of shot was lodged in the sclerotic, two-thirds of its circumference being outside. This reminds us that this special form of injury is, perhaps, of all others, the one on which it is difficult at times to decide the question of enucleation. It would appear that a wound of the sclerotic, rupturing it, may be inflicted,

and intra-ocular hæmorrhage may occur, and still the shot either rebound or drop back after striking the eyeball.

Four times it has occurred to us to see gunshot wounds in which there was an aperture at or near the sclero-corneal junction, and yet no shot had penetrated the interior. In two of those there was temporary displacement of the pupils, hæmorrhage into the anterior chamber, and loss of vision at the time. One of the two recovered, the other has a permanent deterioration of vision. The eye was enucleated in the other two cases; intra-ocular hæmorrhage (into the posterior chamber) had occurred. For subsequent continued irritation, and for the sake of the sound eye, the injured eyeball was enucleated; in neither was the shot found in the ball. In one of these recently removed the aperture was so large that the point of the strabismus hook accidentally caught in it during the operation, and a probe had been tried before admission to hospital. On making a section of the enucleated globe, one hemisphere was full of coagulum; the retina was detached for its greater extent, the other half of the globe being healthy.

There had been a repetition of the hæmorrhage, and during the time the patient was under observation there was occasional improvement in vision and in the transparency of the humor. The day before the operation the sound eye showed symptoms of irritation.

In nearly a parallel case the shot was found in the ball. It would seem as if, owing to the elasticity of the sclerotic, together with its resisting power, the shot rebounds; not having sufficient force, dependent on the distance it is fired, to penetrate, it ruptures, or rather splits the resilient tunic. Shot which, fired at the same distance, may penetrate the soft parts of the face, will not enter, though it may contuse or rupture the eye, owing to this property of resiliency.

Hydrochlorate of quinine (1-100) solution, as a disinfectant, in any case of choroiditis, in which a contagious influence is suspected, is recommended. This disinfectant, as we have proved, is generally useful in this form of lotion in purulent discharges. The importance of the *early* recognition of a malignant growth, both intra-ocular and extra-ocular, is so obvious that it might seem superfluous to dwell on it. Yet it is true that the time in general at which a patient is brought for advice is, when the globe has become glaucomatous, the orbital tissues invaded, the optic nerve extensively engaged, and when there is an absolute certainty of recurrence after removal. It has been our lot to remove the entire

contents of the orbital cavity four times in cases of melanosis, &c. In each case death ultimately took place from recurrence of the disease. Twice early in the disease we have removed eyes for extra-ocular melano-sarcoma, and, so far as we know, there never was recurrence.

The liability of the choroid to suffer from rupture, especially at the posterior or fixed portion, resulting from blows on the eye and any form of contusion, is noticed. So also we find this tendency towards its anterior attachment. To promote cicatrisation by the compress bandage and atropine, and subsequently subcutaneous injections of strychnine (1 pt. nitrate of strychnia in 100 of distilled water, 12 drops for an adult; 3 to 4, children), is the course advised. Perhaps the most interesting chapters in this work are the two in which the treatment and etiology of glaucoma are discussed. We will endeavour briefly to summarise the views of Dr. de Wecker. He defines this disease to be "the expression of a disturbance of equilibrium between secretion and excretion, with increase in the contents of the eye, and increased tension," the inflammatory symptoms depending upon the degree and rapidity with which this disturbance has occurred. When these disturbances occur in eyes already diseased, "we speak of glaucomatous complication, *consecutive glaucoma*." Regarding the excretory tract of the eye as Leber's tract, with its canals of Schlemm and Fontana—the trabecular tissue about the cornea, with its lymph spaces as the channel through which the fluids destined to leave the eye must pass—he looks on interference with the normal filtration taking place in this region as the first essential element in the glaucomatous process. Take for example, iritis, irido-choroiditis, sclero-choroiditis, pannus of the cornea, iritic adhesion, with peripheral synechia anterior or posterior, lens luxations, cicatricial contraction after wounds, especially in the ciliary region, intra-ocular growths which press on the iritic angle, &c.:—"The point on which the whole question of the etiology of glaucoma hinges is the obstruction to filtration; the removal of such obstruction should be the object of all treatment." Thus he regards the etiological process as more or less mechanical. The very increase of tension, he shows, once established, increases the pressure, and thereby the obstruction. In some cases it may be that it is in the neighbourhood of the optic nerve, and in the posterior excretory channel, the obstruction originally occurs. Here there is slight irritation and early excavation of the optic nerve. The general condition of

the ocular tunics and the degenerative changes happening in the eye after fifty years of age, disturbances in the balance of the circulatory currents, and the processes necessary for due elimination, such as are brought about by the prolonged use of atropine, sudden shocks, fits of anger, are sufficient to form the first link in "the vicious circle." These changes are more likely to follow rapidly in the flat and spherical globe of the hypermetrope late in life, and hence the prevalence of glaucoma in aged hypermetropes. "If I discuss thus carefully," says Dr. de Wecker, "the etiology of glaucoma, it is because it is one of the most important questions in the whole range of ocular therapeutics." Iridectomy he looks on as having its principal therapeutical value in the section. This section both re-establishes filtration, and establishes, it may be, "a direct mode of communication between the veins and the anterior chamber." Looking on the section as being the important element in any operation performed in the filtrating zone, he enters on the relative merits of sclerotomy and iridectomy. Though satisfied of the good results of the former, yet he would not pronounce as yet definitely between it and the latter. In two cases only does he advise the relinquishment of iridectomy for sclerotomy—(a) hæmorrhagic glaucoma, and (b) glaucoma absolutum. In the first we avoid risk, in the second we effect our only object—the relief of pain. The danger of using atropine in all glaucomatous states, from its action both on the vessels and also on the iris, causing thereby an artificial glaucoma, from the sustained encroachment on the iritic angle, is shown. On the other hand, the splendid results obtainable from the instillation of eserine, both before and after iridectomy or sclerotomy, are insisted on; its power in diminishing tension, reducing the vascular fulness, freeing the iritic angle, and relieving pain, is remarkable. In fact, only to those who have given this remedy a trial, in all the various states predisposing to glaucoma, is its great value known. Pilocarpine in the form of hydrochlorate we have, as recommended by Dr. de Wecker, constantly substituted for it, and thus escaped the occasional irritating effects of the prolonged use of eserine. So at times we have found pilocarpine of use where eserine has failed. But two essentials must be insisted on—viz., the eserine should be frequently renewed, and obtained in the first instance from a thoroughly reliable source. The hydrobromate has the advantage of not oxidising so rapidly as the sulphate, and hence keeps better.

H. MACNAUGHTON JONES.

[To be continued.]

A Dictionary of Chemistry and the Allied Branches of other Sciences.

By HENRY WATTS, A.B., F.R.S. Third Supplement. Part I.
London: Longmans, Green, & Co. 1879. 8vo. Pp. 838.

THE most striking proof of the recent vast progress which has been made in chemistry and the branches of cognate sciences is afforded by the last issue of the series of volumes supplemental to Watts's Dictionary. Hitherto a single volume was found to afford sufficient space in which to record the chemical discoveries made during the previous two or three years, but now the Supplement, in order to be made wieldy, has to be divided into two volumes. That just issued comprises the letters A to F inclusive, and carries down to the end of 1877 the record of newly-discovered facts and novel theories and speculations. A few of the more important discoveries made in 1878 are also mentioned. A large portion of the volume (177 pages) is occupied by short accounts of the multitude of benzene, benzoyl, benzoic, and benzyl compounds. To read through the names of some of these compounds—to say nothing of the study of their reactions and composition—is sufficient to give a headache to those who “took out their chemistry” twenty or thirty years ago. For example, we learn that by digesting nitrobenzylphenylamine in ammonium sulphide at 100° C., and distilling off the excess of sulphide, the interesting compound *amidobenzylphenylamine hydrochloride* may be procured.

Amongst the newly-discovered acids we find the following:—*Metabenzoylbenzoic, hydrochloraroxycitraconic, hydrobromocumenylacrylic, methylparaoxyphenylpropionic, nitro-orthopomiobenzenesulphonic, &c.*

Of course it is only to those who occupy themselves in the advanced departments of organic chemistry that such substances as those just named possess interest. But the volume contains much novel matter of importance to the pharmacist, the botanist, the sanitarian, and the ordinary medical practitioner. For example, nearly every one who is connected with medicine or the sciences related to it, is interested in the subject of fermentation. In the volume under notice all the most recent experiments in reference to the rather obscure phenomena of fermentations are clearly described. *Résumés* are given of Baudremont and Boehm's investigations in reference to butyric fermentation (a fermentation which in the stomach produces the unpleasant symptoms of heartburn and waterbrash); Durn's observations on cellulose fermentation; the

curious discovery that the head, thorax, and abdomen of working bees contain a ferment which is capable of "inverting" cane sugar and of changing starch into glucose and sugar.

The discussion between the adherents of Bastian, the advocate of spontaneous generation, and of his great opponent, Pasteur, is referred to in the Supplement, and the views and experiments of the antagonists are detailed. This subject naturally leads to the consideration of bacteria, fungi bacilli, microzymes, schizomycetes, or cleft-fungi, *et hoc genus omne*; and in discussing the life-history of these objects which live upon the border-lands of life and visibility much interesting information is given.

Amongst the many articles in this Supplement which relate to histology and animal physiology are—Hoppe-Seyler and Tappeiner's experiments on biliary acids; the researches of Maly, Thudichum, and Simony, as to the nature of bile pigments; and Jacobsens' analyses of bile.

Several methods for the detection of blood are given. Almèn recommends, for the detection of blood in urine, that a few cubic centimetres of guaiacum tincture be put into a test tube, together with an equal volume of turpentine, and the tube to be shaken until an emulsion of the mixture is formed. The urine is to be poured into the tube, and it falls to the bottom. If blood be present the emulsion becomes more or less blue, but otherwise no effect is produced upon it.

We cordially recommend this the latest volume of Mr. Watts's great work to all whose professional or business occupations are aided by chemistry. This dictionary is a credit to the British press, notoriously deficient as it is in great systematic works on science. We really see nothing in its pages to call for hostile criticism, for the greatest care has evidently been taken to keep it free from the errors which arise in condensing elaborate papers into short encyclopædic articles. We notice in this volume the complete absence of the old nomenclature and methods of notation.

The Spectroscope in Medicine. By CHARLES A. MACMUNN, B.A., M.D. London: Churchill. 8vo. Pp. 198. 1880.

ALTHOUGH we cannot quite agree with the statement of the author that the spectroscope seems likely to be of almost as great use in medicine as it has already proved in terrestrial, solar, and stellar chemistry, yet we believe its uses are quite sufficiently great to the

medical man to make the present work a very welcome addition to English medical literature. Up to this there has been no book where the student could find any systematic information on the application of the spectroscope to medical and physiological investigation, and to those who are interested in such matters, and who have not time or opportunity for the perusal of the numerous journals in which they are treated of, the work of Dr. MacMunn will prove of very great service.

The first chapter treats of the formation of the spectrum by a prism, the different kinds of spectra—continuous spectra, absorption spectra, spectra of bright lines—and the solar spectrum, with Fraunhofer's lines. In the second chapter the different kinds of spectroscopes are described and instructions given for their use. The author finds the readiest method of mapping the bands in a spectrum is by projecting the spectrum on paper by a camera lucida adjusted to the observing telescope. The details of this method have been already published in this Journal for 1877. In the case of the microspectroscope a photographed scale attached to the side of the instrument is preferred to the bright-point micrometer, as being more simple and requiring less time in its employment. The great importance of reducing the readings of a spectroscope to wave-lengths of the light of different refrangibility is dwelt on, and an "interpolation curve" is given by which such reduction may be readily made. For the construction and method of using this we must refer the reader to the work itself.

The third chapter is devoted to the application of the study of bright-line spectra to medicine. This deals chiefly with the detection of poisonous metals, and an account is given of the method recommended by Prof. Emerson Reynolds for depositing these substances from solution on platinum points, to be subsequently used for the passage of the electric spark. In this chapter is also to be found a lengthy account of the well-known researches of Dr. Bence Jones on the rapidity with which lithium and other substances pass into and out of the tissues of the body.

From Chapter IV. onwards the work deals with the physiological absorption spectra. Here, of course, the various spectra of the colouring matters of the blood, and their derivatives, occupy the principal place. Before commencing the study of the individual spectra a pretty full account is given of the researches of Vogel on the differences in the spectroscopic appearances of substances according as they are examined in the dry state or in solution in

the different media, and it is shown that, although in these different conditions the same substance may give widely different spectra, and, further, that the spectrum of one substance may very closely resemble that of another, yet, by the application of reagents and comparison of the effects of various solvents, mistakes can generally be avoided, and the spectroscope made a trustworthy means of detection and analysis. The rules laid down by Mr. Sorby for the "examination of mixed colouring matters by the spectroscope" are given in full, and will be found well worthy of consideration by anyone working at absorption spectra.

We may mention that Dr. MacMunn rejects the well-known Sorby cells for holding the fluids under observation, as he finds the solvents and reagents used are apt to dissolve the cement which holds the different parts of the cell together. He uses glass cells without any joining, made of pieces of glass tubing sealed at one end and ground flat. These are set in pieces of wood which prevent the passage to the microscope of any light except that which passes through the substance being examined.

The spectrum of oxyhæmoglobin and that of reduced hæmoglobin are first described. A short *résumé* of our knowledge of the distribution of hæmoglobin in the animal kingdom is given, and Preyer's method of determining by the spectroscope the quantity of hæmoglobin present in blood or other fluid is noticed. We are rather surprised that in a work like this, aiming apparently at great completeness, we find no further reference to the employment of the spectroscope for quantitative analysis. The large treatise of Vierordt is not mentioned, nor the later researches of Hüfner and others who employed similar methods.

The observation made independently by the author and by Prof. Hoffmann, that the venous blood shortly after death has lost all its loosely-combined oxygen and gives the spectrum of reduced hæmoglobin, is of great interest, as showing the share which the walls of the blood-vessels have in consuming the oxygen, the consumption taking place much more slowly if the blood be sealed up from the air outside the body. In death from starvation or from passage of air into the veins the reduction takes place much more slowly than in death from other causes; and in death from asphyxia, not only is the venous, but also the arterial blood found completely reduced immediately after death. In death from inhalation of nitrous oxide, too, the blood throughout the body is found reduced. The author, however, does not adopt the view that the anæsthesia caused

by breathing this gas is entirely due to asphyxia—a view held by Hermann, but which has been recently disproved by Goldstein and Zuntz.

The compounds of hæmoglobin with CO and NO are described. The importance of using artificial respiration and inhalation of oxygen in case of poisoning by CO is dwelt on, and the experimental grounds for the employment of such treatment fully stated. We find the curious statement that the arterial blood will take up only “a small quantity” of NO—namely, 25·4 to 27·6 vols. per cent. This is rather more than the quantity of oxygen which such blood contains loosely combined—in fact, O₂, CO, and NO, are taken up by blood in exactly the same quantity, and replace each other volume for volume.

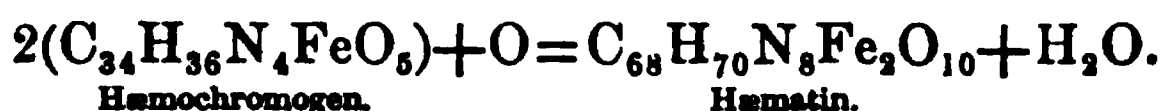
In speaking of sulphæmoglobin—the compound formed when blood is treated with sulphuretted hydrogen, or alkaline sulphides in excess—we find it stated that Hoppe-Seyler regards this body as a sulphur compound of hæmatin and hæmoglobin. Hoppe, however, in his “*Physiologische Chemie*,” says that the composition of the substance is unknown, but that it closely resembles methæmoglobin. We may here notice that Dr. MacMunn does not, in our opinion, do justice to the work of Hoppe-Seyler. To this chemist we are unquestionably more indebted than to any other living man for our knowledge of the colouring matters of the blood; and yet, as in the present instance, we find him generally quoted at second-hand, and frequently, as we shall have again to mention, erroneously. There is not a single reference to his recent great work on physiological chemistry, and only one (apparently at second-hand) to his later papers in the *Zeitschrift f. physiologische Chemie*; and in the bibliographical appendix the reference to the “*Handbuch d. phy- und path- chemischen Analyse*” is to an old edition. We think that such omissions are much to be regretted, and in many places detract seriously from the value of the work before us. We miss, too, in connexion with the subject of sulphæmoglobin, any notice of the very interesting work of Lewin on poisoning by the development of nascent H₂S in the body.

The effect of hydrocyanic acid and of cyanides on the blood is next described; and Chapter V. opens with a full account of Gamgee's researches on the action of nitrites. The author, from his own observations, comes to the conclusion that the body formed by this reaction is very like, if not identical with, methæmoglobin—

a conclusion which is, we believe, that now almost universally held by the most competent authorities.

We turn with much interest to the account of methæmoglobin—a substance concerning which there has been recently much disputing among the physiological chemists—but unfortunately we find little to reward our curiosity. There is nothing new put forward, and we notice some confusion in the statement of older views. Thus, after stating correctly the optical differences between this substance and hæmatin, we find on the next page the most rational view of its constitution to be that it is a mixture of hæmatin and a soluble albumen. The very different views as to its composition held by Stokes, Kühne, Hoppe-Seyler, Jäderholm, Marchand, &c., are simply disposed of by saying that “some have considered it a hyperoxide of hæmoglobin.”

Speaking of hæmochromogen we find another instance of the ill effect of taking authors' opinions at second-hand. The reaction by which the transformation of this substance into hæmatin takes place, and which is attributed to Hoppe-Seyler, is manifestly erroneous, the iron being, as noticed by Dr. MacMunn himself, unaccounted for at the right side of the equation. The equation should read thus:—



In the account of hæmatin the author mainly follows Thudichum, for whose work he expresses a very great admiration. We consequently find several hæmatins described, and the whole description differs most materially from that given by every other physiological chemist. We are not prepared to decide between Dr. Thudichum and all the rest of the scientific world, but from a general knowledge of the work of both sides, we should provisionally prefer to side with such men as Hoppe-Seyler, Preyer, and Kühne, rather than with Dr. Thudichum.

Where Dr. MacMunn got the formula for Teichmann's hæmin crystals we are at a loss to divine. The true formula is probably $\text{C}_{68}\text{H}_{70}\text{N}_8\text{Fe}_2\text{O}_{10} \cdot 2\text{HCl}$, not $\text{C}_{96}\text{H}_{142}\text{Fe}_3\text{O}_{18}$.

We are compelled by limits of space to pass over the account of the action of various reagents on hæmatin, of which several are described.

In Chapter VI. the author gives receipts for the preparation of solutions for the exhibition of the more important blood spectra. These will be found very useful, particularly by beginners. We

regret not to find here the very easy and elegant method given by Hoppe-Seyler for preparing and keeping a solution of hæmochromogen. We possess a preparation of this very unstable substance, which, after some years, still exhibits the spectrum unchanged.

In this Journal (June, 1877) Dr. MacMunn described the spectrum got by addition of bromine to blood. This description is here reproduced. We may say that since 1877 Dr. Marchand, of Halle, apparently without knowing the observations of Dr. MacMunn, has studied the action of bromine, chlorine, and iodine on the blood, and finds that these substances give methæmoglobin, and if added in greater quantity (best with iodine, whose action being less violent can be more readily followed) a substance giving two absorption bands between D and *b*, and which he supposes to be a higher phase of oxidation than methæmoglobin. Like Preyer, Dr. MacMunn finds that iodine or chlorine added to blood gives no spectrum.

The examination for blood by the spectroscope in urine and in pathological fluids, chiefly in the contents of ovarian and parovarian cysts, is next considered, and very full directions by Mr. Sorby given for the detection of blood-stains. The more recent methods of Dr. Richardson, of Pennsylvania, by which he proposes to be able to detect $\frac{1}{43000}$ th of a grain of blood, are considered justly to be less reliable than the methods of Mr. Sorby.

In the last chapter the absorption spectra of bile, urine, and other animal fluids are considered. There is far less known about these than there is about the blood spectra. In speaking of the bile spectra we find the author again following mainly Dr. Thudichum.

It is generally stated that fresh bile gives no spectrum. Dr. MacMunn has engaged in an elaborate investigation, in which he has examined the bile of seventeen different classes of animals. In some of these he finds no spectrum, but in others by dilution he finds a band more or less distinct at F, and which occurs in every bile which gives a spectrum, whatever other bands may be present. This band is intensified by acids, and made faint or altogether removed by alkalis. In the mouse it is peculiarly distinct, and seems to be identical with the spectrum of urobilin—a substance which the author finds not only in febrile, but also in normal human urine. Besides this, there is another bile pigment sometimes under morbid conditions present in the urine. It is indicated by an absorption band which occurs on the red side of the band of urobilin. The precise conditions under which it occurs have not

yet been determined. The author holds strongly to the view that there is a close connexion between the colouring matters of the blood, bile, and urine.

We must pass over the account of the spectroscopic examination of the products of Gmelin's reaction on bile pigment and Pettenkofer on the bile acids, although these are interesting and valuable.

The statement that urobilin is found in meconium is, we believe, erroneous. Zweifel found it absent in human meconium, as did Hoppe, who failed to detect it also in the meconium of the calf. Its absence and the presence of undecomposed tauro- and glycocholic acids is in accordance with the absence of free hydrogen, which again is due to the absence of putrefactive processes in the foetal intestine—a fact insisted on by Hoppe and recently confirmed by Senator.

The work concludes with an appendix on expressing spectra in wave-lengths in accordance with the recommendation of Mr. Sorby, and a tolerably extensive bibliography. The text is illustrated by several wood engravings and three chromo-lithographic plates of spectra. The third plate is entirely devoted to a reproduction of Dr. Thudichum's figures; the others are original. The execution of the plates is very good, but some of the spectra are not drawn with perfect accuracy. Thus in the spectrum of oxyhæmoglobin (Plate I., Fig. 4) the band *a* is represented as broader and more shady at the edges than *b*. This, as everyone knows, is incorrect. Also the figure of reduced hæmatin or hæmochromogen (Plate I., Fig. 15) fails to show the great sharpness and blackness of the band between D and E, which is the chief characteristic of this remarkable spectrum.

We cannot conclude our notice of this work without congratulating Dr. MacMunn on having produced a book for which a great want was felt. We have not hesitated to point out what we believed to be defects, but on the whole we can give it warm praise, and most cordially recommend it to all our readers.

A Treatise on Vocal Physiology and Hygiene, with especial reference to the Cultivation and Preservation of the Voice. By GORDON HOLMES, L.R.C.P., Edin. London: Churchill. Pp. 266. 1879.

THIS little work, although of great excellence, does not call for any very extended notice from us, as it is intended not so much for the medical man as for those who are concerned in the cultivation

of the voice—namely, teachers or students of elocution or of singing. This is clearly stated in the preface:—

“The chief aim of this treatise is to furnish persons who make an artistic or professional use of the vocal organs with a concise but complete account of those scientific relations of the voice, physical and medical, which are generally only alluded to cursorily or passed over altogether in works on elocution and singing.”

“I hope also, as works on the physiology of voice-production and the hygienic aspects of vocal exercise are comparatively rare in English literature, and there is no recent systematic account of either subject, that some of the chapters in the present volume may be of interest to members of the medical profession.”

In an introduction the author gives a historical review of the origin and progress of vocal culture. We find here sections devoted to the various theories of the origin of language and singing, the state of vocal culture among the Egyptians, Greeks, and Romans, and in the middle ages. Here, and indeed throughout the book, there is evidence of very extensive literary research. In the first chapter the principles of acoustics are laid down, and the theory of resonance and that of the production of sounds by pipes and reeds explained.

In Chapter II. the anatomy of the vocal organs is considered, and Chapter III. is devoted to the action of these parts in the production of sound. This is the only chapter which can be considered as of interest to the purely medical reader. After explaining the movements of the thorax, a long historical summary is given of the principal theories which have been put forward from time to time in explanation of the production of voice, prior to the invention of the laryngoscope. The appearances of the larynx, as seen by the mirror during vocalisation, are then described. The author finds that while the low notes of the chest voice are being sounded the glottis is open in its entire length. In the upper chest notes the cartilaginous glottis—that is, the posterior portion bounded by the inner surfaces of the arytenoid cartilages—is closed, while in the falsetto register the anterior portions of the vocal cords come together, so that the air passes only through the middle portion of the glottis, the vibrating portion becoming shorter and shorter as the pitch rises. These appearances are subject to individual differences, apparently dependent on difference of voice, whether bass, tenor, &c. The author thinks he has established two facts in this connexion:—“(1) That in the tenor

voice the cartilaginous glottis is closed in almost the whole compass; and (2) that in the alto (male) voice there is a hyperdevelopment of the anterior sesamoid cartilages (pieces of cartilage which exist in the anterior portions of the vocal cords near their thyroid attachments), which gives a special facility for shutting the ligamentous glottis in front for nearly a third of its length—an equivalent, in fact, to an anterior cartilaginous glottis." This falsetto range seems to be produced by a truly sphincter-like action of all the constrictive glottis muscles. This has the effect of reducing the opening of the glottis to a more or less circular shape, the circle diminishing in size as the pitch rises. "The remarkable delicacy and elasticity of the cartilages of the female larynx is precisely the condition most favourable to such an operation, and an explanation would thus be afforded of the extraordinary range in the highest register so often met with in the female voice." The generally received view that the female voice has three registers—the middle and best part of the voice being analogous to the male falsetto—is rejected by Mr. Holmes—this part of a woman's voice being, if we understand him rightly, equivalent to the upper chest notes of men.

A tolerably full account is given of the probable action of each of the laryngeal muscles, although it is admitted that much of this is as yet merely conjectural. We are somewhat surprised to find no notice of Professor Oertel's method of observing the larynx by intermittent illumination—a method which has led him to give a very different account of the mode of production of the falsetto voice to that given in the work before us. Mr. Holmes does not think that the epiglottis has any part in the formation of the voice beyond reflecting the sound waves against the back of the pharynx, to be thence reflected to the hard palate. The part performed by the pharynx, mouth, and nose as resonating cavities is fully considered, and in the account of the production of the vowel sounds the author follows Helmholtz. The function of the soft palate is to shut off to a great extent the nasal cavities from the pharynx. The passages of the nose, consisting of very short tubes, could resonate only to notes which lie far above the fundamental notes of the voice, consequently only to the higher overtones of these. These higher harmonics lie so close to one another that they produce discord, which is the cause of the disagreeable twang observed when persons speak or sing through the nose. The classification of consonants and their mode of production concludes this chapter.

Chapter IV., on the Physiological Principles of Vocal Culture, deals with the management of the breath, larynx, mouth, &c., in singing and speaking. A good account is given of the various theories which have been put forward as to the cause of stuttering, and of the equally various methods of treatment which have been adopted.

Chapter V.—the Hygiene of the Voice—is simply a short treatise on general hygiene. “The hygiene of the voice in its fullest sense is the hygiene of the whole animal economy; and the spirit of the well-known proverb, which sets forth how closely is interwoven the integrity of mind and body, might with equal propriety be applied to the voice in the form of *vox sana in corpore sano*.”

The rules of special hygiene of the voice are—(1) not to overwork the larynx—a result which the author, we believe, very truly observes is not likely to occur if the method of voice-production is good; (2) not to breathe very cold, or damp, or dry, or impure air, and when possible to breathe through the nose. Of the various lubricants, throat lozenges, &c., which singers and speakers are so fond of using, Mr. Holmes rightly speaks with little favour. He condemns the constant sipping of cold water to which so many persons are addicted, and thinks that a solution of compound tragacanth powder in *warm* water is the best lubricant. For the other rules of special and general hygiene we must refer to the work itself, the perusal of which will well repay any person interested in the art of singing, or in the physiology of the voice.

Schiller's "Lay of the Bell" and other Ballads. Translated into English Metre by ANDREW WOOD, M.D., LL.D., F.R.S.E., &c., &c. Edinburgh: W. P. Nimmo & Co. 8vo. Pp. 147. 1879.

THE indefatigable Dr. Andrew Wood, whose translations of “Don Carlos” and “Nathan der Weise” we have already reviewed, now again comes before us with a translation of some of Schiller's best-known ballads, including “Der Gang nach dem Eisenhammer,” “Ritter Toggenburg,” “Die Kränicke des Ibycus,” and “Der Ring des Polycrates,” printing the originals, page by page, beside his English reproductions, “for the sake of German scholars,” as he tells us in the preface.

If the popularity of a poet be a test of his greatness, Schiller deserves the name of a great poet, as he is undoubtedly one of the

most popular of German poets, both in his own country and in England. In his own country this popularity is probably due to his having embodied the sentimental idealism of Young Germany in a quasi-classical form—less extravagant, and therefore more durable than that in which it appears in the romantic dramas of the Kotzebue school and in his own juvenile piece, "*Die Räuber*." In England the fact that he writes in easily-intelligible German, and never outrages morality, counts for much in his favour. The extravagant admiration which placed him beside Goethe on the summit of the German Parnassus is, however, distinctly on the wane. No critic of any mark would now think of confounding the respectable commonplace faculty of Schiller with the fiery intuition of Goethe. The sight of the well-known group in which they stand laurel-crowned, hand in hand, in marble immortality, may well excite a gentle smile on the spectator's lips—as though, to compare great men with greater, one should see Shakspeare thus posed with Ben Jonson or Fletcher.

Schiller belongs to a class of artists, especially common in France and Germany, who have made the most of a small genius by means of careful self-culture—men like David in France and Kaulbach in Germany, in whom ambition acts as an inspiration, and deliberate skill and academic balance of composition take the place of vision. Such men often do work which just fails of being great, and occasionally have moments of inspiration in which they transcend the limitations of their ordinary style and produce a real masterpiece, as Schiller has in that spirited introduction to his "*Wallenstein*"—"Wallenstein's Lager"—written, we believe, under the influence of Goethe. In this scene he abandons for a moment his somewhat ponderous idealism and gives us a racy bit of real life.

As a lyrical poet Schiller can only claim a very subordinate rank indeed. He is anything but a "born singer." He stirs us with no sudden emotions; he surprises us with no sweet and subtle mysteries of verse. He seldom writes a passage, or even a line, that haunts the ear and the mind inevitably—that seems as if there were a divine necessity for its being exactly what it is, and nothing else. When he does succeed in fixing a lyrical cadence in the mind, it is by no means invariably productive of "joy for ever" to his reader. The barren jingle of the songs of Kuoni and Lodi, in "*Wilhelm Tell*," recurs to the mind as distressfully as the strain of some popular song poured out on a barrel-organ. In semi-lyrical forms, such as these Ballads, his success is more marked. His neat

execution and elegant, unimaginative language, are not unsuitable to sentimental narratives like "Ritter Toggenburg" and "Der Gang nach dem Eisenhammer," which are, accordingly, genuine favourites with the Schillerian public. "Das Lied von der Glocke" exhibits his power of composition very favourably—the various pictures following each other in interesting sequence, and none being very tediously elaborated; and that poem, and, still more, "Die Kindesmörderin," are full of that high-sounding rhetoric so characteristic of his poetry. The latter may, indeed, be taken as a fair sample of Schiller's work, illustrating as it does the weak as well as the strong side of his method of dealing with human life and passion. The situation is one which has been treated repeatedly by German poets. A girl, betrayed and abandoned by her lover, has killed her illegitimate child, and awaits her own death by the doom of the law. The dungeon scene in "Faust" is, we may remember, very similar in its main incidents; but Schiller's treatment of the subject is very different from Goethe's—not merely in being a monologue in less distinctly dramatic form; the spirit of it is very different. In the wild speeches of Gretchen we seem to overhear the agonised utterances of a real woman. She does not moralise on her situation in sententious stanzas, like Schiller's heroine, who is little more than a lay figure for the poet to hang his graceful generalisations upon. Gretchen, acting again in her feverish imagination the scenes of her former life, is a most pathetic figure. Luise, bidding farewell to the world, bewailing her lost innocence, reproaching her lover, or picturing the horrible incidents of her own death, in fine rhetorical language, is not pathetic at all. She is not a real woman, but a piece of German-poetic-ideal phantasm.

"Wehe! menschlich hat dies Herz empfunden!
 Und Empfindung soll mein Richtschwert sein!
 Weh! vom Arm des falschen Manns umwunden,
 Schliefe Luisens Tugend ein."

This is very prettily turned, indeed; but it is not the language of passion, and does not affect the reader much. Still the poem is not a bad one in its way. It has all Schiller's power of putting what he wishes to put clearly and forcibly before the reader. His sympathy here is not with a particular woman who has been betrayed, but with women in general who are liable to seduction. His Luise is the personification of an abstraction, and through her he expresses his horror of the sin of seduction and its consequences,

in a quasi-dramatic form. From this point of view the poem is a decided success.

Dr. Wood's notion of what a translation of ballad poetry should be does not accord with ours. He apparently considers that any attempt to reproduce the metre of the original is rather an impertinence than otherwise, and that the translator's sole view should be to give the sense in any kind of verse into which it can be tortured. Judged by his own canons, his translation is fairly successful. Schiller's meaning is usually plain enough to anyone with a slight knowledge of German who is not above using a dictionary, and Dr. Wood generally gives his meaning wonderfully well, considering the difficulty he evidently has in writing anything that can pass for "English metre." The following stanzas from "*The Infanticide*," his translation of the poem referred to above, are a favourable specimen of his work:—

"Hark ! the dull-tolling bells proclaim
That now has struck my hour of doom ;
On to the scaffold, in God's name
Lead me, companions of the tomb !
Take, Earth, these last, these parting kisses !
And take, O Earth, these tears away !
Thy poisons—oh, these tasted blisses—
Heart-poisoner ! now we're quits for aye.

"Farewell ! ye bright sun's gladsome rays,
Soon to be changed for earth's black mould !
Farewell ! ye joys of roseate days
Which the poor maiden oft cajoled !
Farewell ! dreams woven with golden thread,
Of paradise the fancies bright !
Oh ! e'en at morn their buds were dead,
Never to blossom in the light."

These lines, while rendering the sense of the original pretty closely, read smoothly enough to pass muster as English verse. As much can scarcely be said for such verses as these, from "*Ritter Toggenburg*":—

"And *there* are done great deeds and brave
By those heroic arms,
Their plumes above their helmets wave
Amidst of foes the swarms.
The name of Toggenburg—his foe—
Appals the Mussulman ;—
Yet the knight's heart from its great woe
Never recover can."

The Medical and Surgical History of the War of the Rebellion.
Part 2, Vol. I.—Medical History. Being the Second Medical Volume. Prepared under the direction of JOSEPH K. BARNES, Surgeon-General, United States Army. By JOSEPH JANVIER WOODWARD, Surgeon, United States Army. Washington: Government Printing Office. Pp. 869. 1879.

THIS fine volume treats of the alvine fluxes, and is entirely devoted to the consideration of acute and chronic diarrhœa and dysentery. It was the original intention of the author to have compressed the discussion of the camp fevers also into this volume, but he has finally concluded to postpone the consideration of the fevers, as well as the other chief camp diseases (such as scurvy) to the third medical volume of this work. He considers that the nature of the subject justifies this determination, because not only do the alvine fluxes usually cause more sickness and mortality among troops during war than any other group of diseases, but this circumstance affords a better opportunity for their study than can commonly be obtained in times of peace. It has heretofore happened that many of the most important accounts of these disorders, whether in ancient or modern times, have been the fruit of military experience; and, it may be safely said, the present volume will not prove an exception. The ancient and modern literature of the subject has been carefully collated, the authority in all cases verified, and the references and citations printed in small type in the shape of foot-notes. The author modestly indulges a hope, which cannot fail to be realised, that the special studies herein related will be found useful by civil practitioners as well as by the medical officers of military organisations. The illustrations form no small part of the value of this work. Besides coloured diagrams, there are ten chromo-lithographs, and seventeen photographs reproduced by the heliotype process, which are as permanent as the letterpress itself; four plates copied from photo-micrographs, magnified twelve diameters, etched on steel; and eight facsimiles of photo-micrographs reproduced by the heliotype process, as in the case of the other photographic plates. There are, in addition, forty-two photo-relief cuts, copied from photo-micrographs.

The first part of the work consists of Reports and extracts from Reports relating to Diarrhœa and Dysentery. Then follows a section devoted to Fatal Cases of Diarrhœa and Dysentery, with accounts of the morbid appearances observed. The main body of

the work is devoted to the consideration of Remarks on the Pathology and Treatment of Diarrhœa and Dysentery. The work is a mine of information on the subjects of which it treats, and one in which the ore by no means lies merely on the surface or in shallow lodes.

Syllabus of a Course of Lectures on Physiology. By J. BURDON SANDERSON, M.A., LL.D., F.R.S. Second Edition. London: H. K. Lewis. 8vo. Pp. 143. 1879.

NOTES of a course of lectures by such an able physiologist and such an experienced teacher as Dr. Sanderson, cannot but be welcome to every student and teacher of physiology. The present edition, although enlarged, does not pretend to be a treatise on physiology, but merely to give the briefest possible statement of the bare facts on which the teacher, in his lectures, will have to enlarge. Yet it is surprising what an enormous amount of matter is condensed into so few pages. There is scarcely a fact of importance which does not find mention, and the whole is written in the accurate pointed style which distinguishes all the writings of the author.

The arrangement, which remains unaltered from the first edition, is somewhat peculiar. The first part treats of the chemical processes, the second of the mechanical processes, and the third of the functions of the nervous system. This is, no doubt, a scientific and philosophical division, but it has the disadvantage of widely separating different parts of the same process. Thus in the first part we find given the chemistry of the blood and respiration, in the second the mechanical problems concerned in circulation and the respiratory movements, and in the third the nervous influences by which these mechanical processes are maintained and regulated.

One of the most useful features in the book are the practical exercises. At the conclusion of the first part a number of experiments, generally of a simple and easy kind, are given to explain the principal properties of the different food-stuffs and the chief animal fluids. These include experiments on artificial digestion, qualitative and quantitative analyses of urine, and experiments on the more important constituents of the blood. At the end of the volume are practical exercises relating to the physiological properties of the contractile and excitable tissues. These can all be performed without violation of the curious legal restrictions under

which we have at present the misfortune to live. The experiments include those on nerve-stimulation, the action of certain poisons as curara and veratrin on muscle and nerve, muscular contraction and tetanus, on the frog's heart, on the functions of the spinal and reflex centres in the frog, on sensation and perception, and on vision. The whole concludes with certain demonstrations of the more fundamental phenomena of circulation and respiration, and of the electro-motive properties of muscle. These cannot be repeated by each student, but are demonstrated to the class each session.

Dr. Sanderson advises every student who wishes to acquire a serviceable knowledge of the elementary facts of physiology to work through these exercises—advice the adoption of which we cannot too strongly recommend.

We think this work will be found most useful to all students of physiology.

THE CHORDA TYMPANI NERVE.

DR. HORATIO R. BIGELOW, from experiments made upon dogs trained in the manner described by Bernard for noting the impairment of taste, has arrived at the following conclusions:—"1. The chorda tympani nerve is distinct and integral throughout its entire length. 2. It is derived from the nerve of Wrisberg, and not from the facial. 3. Its especial sensory function is derived from the ganglion upon the nerve of Wrisberg, into the granular protoplasm of which the ultimate fibrils may be traced. 4. The lingual branch of the fifth presides over general sensibility only. Isolation of the chorda tympani as completely as possible destroys the sense of taste in the anterior two-thirds of the tongue, the fibres undergoing degeneration. 5. Section of the lingual destroys sensibility, but only modifies the sense of taste, this modification being due exclusively to the branches from the chorda tympani. 6. Section of the facial, behind the origin of the chorda tympani, destroys the sense of taste *only after a lapse of time*, and this, not because the facial at this point contains gustatory filaments, but because the nerve is cut off suddenly from its supply, and has received such a shock that it undergoes degeneration. If the chorda tympani be drawn out at the point where we first notice its filaments of origin, and divided, the sense of taste will be almost entirely destroyed. If the nerve of Wrisberg be cut in the aqueduct behind the ganglion, the sense of taste is lost—from which it may be inferred that the intermediary nerve is continued in the chorda tympani, and that this latter is a carrier of the sense of taste from the cells in the intumescencia gangliiformis."—*N. Y. Med. Record*, Jan. 17, 1880.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART III.

HALF-YEARLY REPORTS.

REPORT ON
NERVOUS AND MENTAL DISEASE.*

By RINGROSE ATKINS, M.A., M.D., &c.; Resident Medical
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I. MENTAL DISEASE IN GENERAL.

The Curability of Insanity.—Dr. Pliny Earle, of the Northampton Asylum, Massachusetts, U.S.A., in a memoir read several years since before the New England Psychological Society, and with a reprint of which he has now been good enough to furnish me, discusses the recoveries from insanity from a statistical point of view, his main endeavour being to show that the recorded recoveries in asylum statistical tables are considerably in excess of the actual number of *persons* who do permanently recover, as, owing to frequent readmissions and redischarges of the same individual, the latter are often counted over and over again, either in the same or subsequent years, as *patients* who have been discharged recovered, one *individual* thus appearing in the tables as several *patients* or *cases*. As the result of his investigations through the records of the United States asylums, as well as from an examination of the published opinions of eminent authorities both in America and Europe, he concludes that:—

1. The reported recoveries from insanity are increased to an important extent by repeated recoveries from the periodical or recurrent form of the disease in the same person; and, consequently—

2. The recoveries of *persons* are much less numerous than the recoveries of *patients* or *cases*; and, consequently—

3. From the number of reported recoveries of *cases* or *patients*,

* The author of this Report, desirous that no contribution to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal, they will be forwarded.

it is generally impossible to ascertain the number of *persons* who recover.

4. The number of reported recoveries is influenced, sometimes largely, by the temperament of the reporter, each man having his own standard or criterion of insanity.

5. The large proportion of recoveries formerly reported were *often* based on the number of patients *discharged* instead of the number *admitted*, and *generally* upon the results in a number of cases too small to entitle the deduction therefrom of a general formula of scientific truth; and these proportions were evidently increased by that zeal and (for want of a better word) rivalry which frequently characterise the earlier periods of a great philanthropic enterprise.

6. The assumed curability of insanity, as represented by these proportions, has not only not been sustained, but has been practically disproved by subsequent and more extended experience.

7. The reported proportion of recoveries in all cases received at the institutions for the insane has been constantly diminishing during a period of from ten to twenty years.

In concluding, the author quotes Dr. Thurnam, whose estimate of the curability of insanity, drawn from the results obtained in the York Retreat during a period of forty-four years, he believes to be the most nearly accurate, and hence the most reliable of any that has yet been published. Dr. Thurnam writes:—"In round numbers, then, of ten persons attacked by insanity, five recover, and five die sooner or later during the attack. Of the five who recover, not more than two remain well during the rest of their lives; the other three sustain subsequent attacks, during which at least two of them die. But although the picture is thus an unfavourable one, it is very far from justifying the popular prejudice that insanity is virtually an incurable disease; and the view which it presents is much modified by the long intervals which occur between the attacks, during which intervals of mental health (in many cases of from ten to twenty years' duration) the individual has lived in all the enjoyments of social life."

At a meeting of the College of Physicians of Philadelphia, May 7, 1879, Dr. Isaac Ray read a paper on the same subject, in which he differs somewhat from the conclusions arrived at by Dr. Pliny Earle. Dr. Ray thinks that the views held by Dr. Earle are not borne out by the facts properly interpreted, and the points

which he advances, going over the same ground as Dr. Earle, are:—

1. Those qualities of temperament (referring to the statement of Dr. Earle) which lead men to unduly magnify their achievements, are as common at one time as at another.

2. The practice of reporting cases instead of persons has not been confined to any particular period, and, therefore, while it may vitiate our estimate of the curability of insanity, it cannot make the proportion of recoveries larger or smaller at one period than another.

3. Cases marked by high excitement entered our hospitals in a larger proportion to those of an opposite character fifty years ago than they do now.

4. Under the influence of highly civilised life, the conservative powers of the constitution have somewhat depreciated, and to that extent impaired the curability of insanity.

5. During the last fifty years, cerebral affections, in which insanity is only an incident, have been steadily increasing, and thus diminishing the proportion of recoveries.

In a paper read before the Medical Chirurgical Faculty of Maryland, Dr. J. S. Conrad, Chairman of the Section of Psychology, treats of the same subject, and supports the views of Dr. Pliny Earle. Speaking of the comparative results of the old almshouse system of treatment and the modern asylum method, he quotes from the Report of Dr. Skae, Inspector of the Insane for New Zealand, who shows that, notwithstanding the deplorable manner in which the insane are treated in that colony, the ratio of recoveries to admissions is 13 per cent. higher than in the Scotch and Irish asylums, and 23 per cent. higher than in England, their death-rate 4·4 per cent., being 4·5 per cent. lower than in England, and from this he would argue that the more refined and expensive mode of treatment does not yield correspondingly good results.

The Non-Asylum Treatment of the Insane.—In a paper read before the Medical Society of the State of New York, in February, 1879, and printed in his new publication—"Neurological Contributions"—Dr. W. A. Hammond deals with this question. The chief object of his memoir, he states, is to show that the commonly received opinion among physicians and the public generally—that as soon as possible after an individual becomes insane he or she must be at once placed under the restraint of a lunatic asylum—is erroneous, and that the medical profession is, as a body, fully as capable of

treating cases of insanity as cases of any other disease, and that, in many instances, sequestration is not only unnecessary, but positively injurious. Many of his arguments carry considerable weight, and, with certain restrictions, have been received by, and must meet with, acquiescence from all physicians who have devoted thought to the matter; but the general tone of Dr. Hammond's remarks is such as to clearly indicate to us, on this side of the Atlantic, that in penning them he was actuated by no very friendly feelings towards American asylum physicians, upon whom he passes strictures by no means complimentary either to their qualifications or scientific attainments. Few physicians—in this country, at least—will, I think, go with him in the assertion he makes, “that a general practitioner of good common sense, well grounded in the principles of medicine, with such a knowledge of the human mind and of cerebral physiology and pathology as can be obtained by study, and familiar with all the clinical factors in his patient's history, is more capable of treating successfully a case of insanity than the average asylum physician.” How many *general practitioners*—their minds occupied by the detail of their varied work, and necessarily obliged to “run as they read”—could devote sufficient time to the study of cerebral physiology and pathology to enable them to obtain that acquaintance with the subject which an asylum physician may get by devoting even a moderate share of study to a matter which is daily brought before him in every phase, and with which he has solely, or all but solely, to deal? It will, I think, be agreed by the majority of physicians that in this statement Dr. Hammond goes too far; for while it must be allowed that many physicians totally unconnected with asylums are as competent, and perhaps more competent, to deal successfully with cases of insanity by reason of their making it and kindred diseases the object of their special study, yet this cannot equally apply to the ordinary practitioner engaged in the varied routine of his profession.

II. ANATOMY AND PHYSIOLOGY OF THE BRAIN AND NERVOUS SYSTEM.

The Blood-vessels of the Nerve-centres.—The recent issues of *The American Journal of Insanity* contain a series of articles by Dr. Theodore Deecke, on “The Structure of the Vessels of the Nervous Centres in Health, and their Changes in Disease.” In the April Number (1879) he describes the vascular arrangement in the

cerebral cortex thus:—"The external layer of the convolutions receives its vascular supply mainly from quite small branches of the second arterial network of the pia mater which, in a right angle, enter into its tissue, and at once break up into ducts of small calibre; this is the rule. Occasionally a larger stem on its way downwards may send off a branch, or one of the smaller may enter the ganglionic layer. The tissue does not abound in capillaries, but their calibre is always larger than that of the capillaries of the ganglionic layer." "The second territory of nutrition is the ganglionic layer. It receives its vascular supply from the first network of anastomosis in the arachnoid spaces, from arteries of considerable size, which penetrate the cortex of the cerebrum down to the border between the gray matter and the medullary substance, before they divide. I do not fully agree with Duret, who separates this territory from the following—the medullary layer. The main supplying vessels for both districts are the same, yet the manner in which they break up into fine ramifications is a point of difference, and justifies a distinction between the two and a separate consideration. The vessels, as a rule, after having reached the lower district of round cells which separates the ganglionic layer from the medullary substance, send off branches at a right angle. If divisions occur above this point they are at an acute angle, and it is not infrequent that two vessels almost of equal calibre are observed in the same perivascular canal. From the rectangular branches others proceed in an upward direction—that is, from the internal towards the external layer, which abruptly break up into that fine and dense network of capillaries by which the ganglionic territory is characterised. The main stems, however, proceed in their course downwards into the white substance, where they again divide at more acute angles, and where the main stems themselves gradually diminish in size and obtain a capillary appearance. From this arrangement it occurs that although both territories receive their blood supply from one and the same source, in the ganglionic layer the districts of nutrition appear to be very small, with a limited longitudinal and a small lateral extension, while in the white substance the meshes of the capillaries are wide and prolonged, and follow the course of the fibres. This arrangement seems to be of importance physiologically. From the gradual transition of the larger tubes into those of smaller transverse diameter, it follows that the pressure of the blood also in the nutritive vessels of these districts must be at all times higher than those of the ganglionic layer. To this has

to be added that the arteries are, in fact, terminal arteries in these districts. The medullary layer is, therefore, not so well protected against persistent deviations of the circulatory movements from the normal standard as is the gray cortex of the brain. It is in accordance with this fact that all cerebral disorders, originating from vascular lesions in the beginning, are characterised simply by functional disturbances in the conductive elements of the central nervous system, and these may continue for a considerable length of time before symptoms arise which point towards a deeper affection of the organ in which the ganglionic centres of the brain are themselves involved. Cadiat (*Revue des Sciences Médicales*, abstracted in *Journ. Ment. Science*) records his investigations on the cerebral circulation. He states that, by a series of injections (opaque), he has shown that the arteries and veins in the pia mater are connected by a series of vessels other than capillaries. Their existence was proved, he thinks, by the fact that the injection of tallow and vermilion returns very rapidly and in large quantities by the veins, without having reached the capillaries. Duret opposes this view, and does not admit that communications exist between the arteries and veins other than the capillaries; he says that transparent injections should be used in such researches.

The Psycho-motor Centres of New-born Animals.—The researches of Prof. J. Tarchanoff (*Revue Mensuelle*, Oct. and Nov., 1878) were intended to examine further the interesting fact proved by Soltman (vide *Dublin Journ. Med. Science*, May, 1876, pp. 423–24), that the cortical-motor centres are not excitable in the new-born dog until the tenth day, from which time they successively develop in function. Soltman concluded that all movements of the new-born animal are purely reflex, and in this view he was confirmed by the absence of all symptoms on the destruction of the hemispheres before the tenth day. Subsequently this author found, further, that at this early period no inhibitory influence on reflex action was exerted by the hemispheres, and that the inhibitory action of the vagus on the heart was also wanting. Soltman, however, only experimented on puppies and rabbits—animals which are born blind. Tarchanoff compared these results with experiments on new-born guinea-pigs. This animal, born with open eyes, is also more developed at birth, as is shown by its bony skull and the existence of furrows (four in number) in the cerebral cortex. In the new-born guinea-pig Tarchanoff could easily excite isolated muscular movements by faradising the cortical centres. The

function of the centres could even be demonstrated on the foetus of the guinea-pig some days before birth.

The inhibitory influence exerted by the cortex on reflex actions could also be demonstrated on the new-born guinea-pig by measuring the time a current passing through the hind leg required to produce a reflex movement. This time was very considerably lengthened by electric or mechanical irritation of the cortex. In the new-born guinea-pig the inhibitory action of the vagus on the heart was also marked in Tarchanoff's experiments.—(*Am. Journ. Nerv. and Ment. Dis.*)

The Development of the Brain after Birth.—At the Session of the Soc. de Biologie, Mar. 30, M. Parrot made a communication on this subject, based on the autopsies of ninety-six infants ranging in age between birth and the end of the first year. He concludes that the development of the brain is very slow, that the cerebellum is more rapidly developed than the cerebrum, and that the anterior portion of the latter is of slower growth than the posterior. The development of the occipital region is in relation to the rapidity of formation of the bony sutures in that region. Further, that in the majority of cases the right hemisphere develops more quickly than the left, and that the development of the white and gray matters are correlative.

Cases of Arrest of Development.—In a clinical lecture published in his "Neurological Contributions," Dr. W. A. Hammond describes the appearance and peculiarities, physical and mental, of three brothers, imbecile dwarfs, with whose photographs he illustrates the paper. The father had died of tubercular lung disease, the mother was alive and healthy. She stated that she used to worry a good deal over the dissipation of her husband while pregnant with all her children, but never more so than while pregnant with a girl who was born between the two youngest dwarfs, and who is well developed and healthy in every particular. She further says that while pregnant with the eldest of the dwarfs she lived opposite a French girl, who was very short, fat, and "old-fashioned looking," and that she saw this girl every morning as she looked out of her front window. She declares that all the dwarfs were splendid children up to three years of age, and well formed, but that each as he attained that period stopped growing. The eldest, Johnny Murray, is nearly eighteen years of age and of very idiotic appearance; his habits and manners are those of a child two or three years old; he can only utter a few words, which can with difficulty be

understood; he is extremely imbecile, and it has been found impossible to teach him the letters of the alphabet; he knows his name, for when called he turns his head with a half-inquiring, half-scared expression. His mother says he is very obstinate, and his greatest delight consists apparently in being let alone. The special senses, as far as can be determined, are of fair power, there being, perhaps, some slight cutaneous anæsthesia; and there is deficient reflex excitability; he is very "pot-bellied;" there is a slight umbilical hernia, and the generative organs are about as fully developed as in a boy five or six years old. The comparative measurements of the three brothers are given below. The second boy, Joe, is fifteen years old; although of very feeble mind, he is decidedly more intelligent than his elder brother. He goes to school, and his mother says he learns a little, and that his memory is good. He is brighter and more cheerful than Johnny, but his power of speech is limited almost entirely to his likes and dislikes and to his animal wants; his movements are more vigorous and less automatic than his brother's; he is taller, his belly less protuberant, and he also has a slight umbilical hernia; his generative organs are those of a boy of four or five years. James, the youngest, is ten years old, and he is said to be of a happy disposition; he is the most intelligent of the three—talks more, plays more, is more active in his habits, than either of the others; his articulation is more distinct and his expression more intelligent; he, however, is very bow-legged, and has a decided degree of lordosis. The following are the comparative measurements of the three:—

Name		Height	Circumference of Head	Circumference of Abdomen	Circumference of Chest
Johnny M.,	- 1878,	33½ inches	20¾ inches	25½ inches	24½ inches
	- 1879,	33½ "	21 "	22 "	24½ "
Joe M.,	- 1878,	37½ inches	21½ inches	23¾ inches	23 inches
	- 1879,	37½ "	20¾ "	23½ "	23 "
James M.,	- 1878,	32 inches	20½ inches	24 inches	23 inches
	- 1879,	32½ "	21 "	22½ "	22 "

Examining this table it is found that James only has grown in

height during the past year, but that the increase is only half an inch. The circumference of the head in each case has slightly increased, except in that of Joe, there being in him a diminution of half an inch.

All have undergone a reduction in the size of the abdomen, and in the case of Johnny this amounts to three and a half inches of the circumference. The circumference of the chest remains the same in Johnny and Joe, but is lessened one inch in James. The face in each of the dwarfs is large in proportion to the part of the head containing the brain, while the latter, if taken alone, is comparatively small. Their features are all of Mongol type, the eyes being small and set angularly in their sockets; the cheek bones are high, and even the complexion is similar to that of the Tartar race. All three have a narrow and high palatine arch.

III. NEURO-PATHOLOGY.

Neurasthenia (Nervous Exhaustion).—This obscure and hitherto unnamed aggregation of symptoms has lately been receiving considerable attention in America, at the hands of Drs. Beard, Jewell, Hammond, and other neurologists. Dr. George Beard, who has pushed the subject farther than either of the others, and who brought the matter forward at the meeting of the British Medical Association in Cork, states that although the affection is found in these countries and on the Continent, yet it is pre-eminently an American disease. It might indeed, he says, be properly called *Neurasthenia Americana*. In a paper on "American Nervousness" he divides the generic term neurasthenia into two: cerebraesthesia—exhaustion of the brain; and myelasthenia—exhaustion of the spinal cord. Among the symptoms which he refers to cerebraesthesia are—tenderness of the scalp, cerebral irritation, tenderness and whiteness of the teeth and gums, flushing of the face, special idiosyncrasies in regard to food and external irritants, morbid desire for stimulants and narcotics, insomnia in its varied manifestations, dilated pupils, melancholia or mental depression, deficient memory or power of intellectual control, different forms of morbid fear—as *astrophobia* (fear of lightning), *agoraphobia* (fear of places), *anthrophobia* (fear of man and society), and its opposite, *monophobia* (fear of solitude), sick headache and various forms of headache and pains in the head, disturbances of the nerves of special sense—as *tinnitus aurium* and specks before the eyes, subjective tastes and odours, dryness of the skin, eyes, and throat, and mucous membranes generally. Among the leading symptoms of myelasthenia are—spinal irritation with

general hyperæsthesia, irritation of the tip of the spine, coccygodynia, irritable breast, irritable ovaries, irritable womb, vague pains through the body, flying neuralgias, tremulous and variable pulse—sometimes very high and sometimes very low, with occasional attacks of palpitation—sudden giving way of special or general functions, shooting pains in the limbs similar to those of ataxy, sudden starting when dropping to sleep, abnormalities of the secretions and dryness of the skin, or the opposite, excessive perspirations, local and general—as sweating of the hands and feet, gaping, yawning, stretching, neurasthenic forms of chilliness, creeping sensations in the spine, ticklishness, local spasms of muscles, the so-called fibrillary contractions. The differentiation between cerebrasthenia and myelasthenia is not absolute—a number of the symptoms being common to both, and the two forms often merging into each other.

It is of supreme scientific and practical importance to be able to accurately distinguish between neurasthenia in its different forms and the symptoms of the early stages of grave structural lesions of the brain, spinal cord, or peripheral nerves. To make such a differential diagnosis is sometimes the severest test to which the neurologist can be brought, and one of the highest value for the happiness, the plans, and the whole future of his patient. Neurasthenia is differentiated from organic disease by taking into consideration these four elements:—(1) The fluctuation and inconstancy of the symptoms; (2) heightened reflex action; (3) the existence of some certain special symptoms which will be rarely found in organic spinal disease—such, for example, as the different forms of morbid fear, palmar hyperidrosis, excessive tenderness of the spinal cord, abnormally active pupils, mental depression, extreme insomnia, and a morbid desire for stimulants and narcotics; (4) those in whom the nervous diathesis predominates are likely to have functional nervous disease. In regard to the prognosis in cases of this kind this general statement is sustained by experience—viz., all of these cases may be relieved; many of them can be absolutely or approximately cured; but in all cases time and patience are necessary to bring about these results. On the different forms of “morbid fear,” as a symptom of nervous disease of this kind, Dr. Beard has written a special paper, which was read before the American Neurological Association, and published in *The Hospital Gazette*, a reprint from which the author has kindly sent me. He there gives the generic title of *topophobia*, from the Greek word τόπος, place, to the various forms of “fear of places,” which includes the *agoraphobia*

of Westphal, fear of open places, and the *claustrophobia* of Ball (paper read before Brit. Med. Assoc., and International Med. Congress, Amsterdam, 1879), fear of closed places. He describes many curious cases of these conditions which have come under his observation. The difference between fear as a symptom of neurasthenia, and fear as a symptom of insanity, lies in the fact that, in the former, the sufferer is aware that his fears are groundless and often ridiculous, while, at the same time, he can by no means shake them off; whereas in the latter the patient has a belief in the reality of the causes which inspire his terror. Space prevents me entering further on Dr. Beard's interesting researches, or on Dr. Jewell's lectures on the same subject, in the second of which he enters upon the explanation of the symptoms which I have just mentioned.

Cerebral Traumatisms.—After a prolonged study of the phenomena belonging to each variety of shock, Dr. Duret deduces the following general laws (*Experimental and Clinical Studies of Cerebral Traumatisms*):—1. When a localised lesion is produced by the traumatic action of the cephalo-rachidian liquid in any region whatever of the myelencephalon, it is revealed by certain signs which are in relation with the functions of the wounded part. 2. In the first period of the phenomena of shock the signs differ according to the degree of intensity of the lesion produced:—

(1.) If the destruction of the wounded part (centre or conductor) is complete, there is a loss of function—a paralysis.

(2.) If the lesion is light and non-destructive, and consists in a light shock, there is, or will be by mechanical irritation, exaltation of function.

3. In the second period, or that of congestive and inflammatory reaction, if the destruction of the part is complete, we may, nevertheless, observe at first phenomena of exaltation generally, finally succeeded by paralysis. 4. In all periods there may be exhibited *phenomena of diffusion* of symptoms, such as epileptiform attacks, contractures, reflexes, &c.

Speaking of the *rôle* which the dura mater plays in the production of motor and sensory symptoms, Dr. Duret feels authorised to declare, as the result of his observations, that “contractures,” secondary to lesions of the convexity of the hemispheres, are due to irritation of the nerves of the dura mater. He generalises as follows:—Lesions of motor regions—centres or conductors—manifest themselves by localised clonic spasms, by spasms generalised under the form of epileptic attacks, or by paralysis. Lesions of

sensitive fibres are revealed by pain, by hyperæsthesias, by anæsthesias, or by *reflex motor phenomena* "contractures," or tetanic attacks; and, according to Duret, the chief seat of the sensory irritation which produces such phenomena (so far as the cranium is concerned) is the dura mater.

The Trophic Relations of the Vagi Nerves to the Heart Muscle.—Dr. Herman Eichorst, in a *brochure* on this subject, describes the results which he has obtained by section of the pneumogastriacs in birds and mammals. After detailing the changes in the respiration and cardiac sounds, he alleges that in birds there is no impairment of digestion whatever, and hence that death, which inevitably follows the section, is not due to nutritive disturbances. He further states that *post mortem* examination revealed no pathological alteration in the lung tissue, and that in birds pneumonia does not occur in consequence of section of the vagi. The *heart* he always found diseased after death, the microscope showing the muscular fibre filled with fat granules and drops, while the striation had more or less disappeared. He argues that this cardiac degeneration is due to the presence in the vagi nerves of fibres, the section of which produces it, and that it is to this degeneration that death, often sudden, must be ascribed. In mammals, rabbits, and dogs, Eichorst found some degree of pneumonia, but in them also the heart was similarly affected. In this connexion I may mention a case which came under my observation some time since, which is recorded in abstract in *The Brit. Med. Journ.*, June 9, 1877:—An elderly woman, for many years suffering from quiet dementia, died suddenly, without presenting any symptoms of cardiac disease or lung trouble. *Post mortem* examination revealed the apex of the right lung adherent to the pleura, and its tissue reduced to a grayish pulp; the left lung was quite healthy (there was no cough or expectoration during life); the heart was in an advanced state of fatty metamorphosis, the microscope revealing the muscular tissue either filled with fat globules or reduced to a granular *débris*. The pia mater covering the right lateral half of the medulla oblongata was thickened and closely adherent to the nerve substance, from which it could not be stripped without injury to the latter; the right vagus nerve was fibroid, and enclosed in this thickened tissue. A transverse section showed numerous spots of miliary sclerosis; the nerve cells were somewhat atrophied. At the time it occurred to me that the cardiac degeneration was connected with the disease at the nerve origin, and if the more recent researches of

Eichorst be verified, it would seem to bear out this. In a paper in the *Archiv für Physiologie*, Zander discusses the same subject, directing more especial attention to the lungs. He found, however, contrary to the results obtained by Eichorst, that section of the vagi in birds does not leave the lungs intact. In every instance the operation was followed by disseminated spots of hyperæmia and œdema of the lung. In mammals, on the other hand, the nerve section caused a true pneumonia, which was mainly or wholly due to the entrance of fluid and food into the trachea. In some instances Zander found a fatty degeneration of the heart, but he puts the true cause of death in birds down to the starvation resulting from paralysis of the gizzard and œsophagus. Induced by Eichorst's results, Wassilijew took up the same subject in Prof. Rotkin's laboratory in St. Petersburg. He also found cardiac degeneration after nerve section, but attributes it not to the existence of *trophic* fibres, as Eichorst does, but to the starving condition which the section brings about.

Myxœdema and its Nervous Symptoms.—In the current number of *The Journal of Mental Science*, Dr. Savage draws attention to the characters of this affection, so designated by Dr. Ord, of St. Thomas's Hospital, who has described it particularly in a paper read before the Clinical Society in October last (*Lancet*, p. 578). Sir William Gull was the first to notice the condition in a paper "On a Cretinoid State Supervening in Adult Women," read before the Clinical Society in 1873. Dr. Savage remarks that the essence of the disease is the deposit of a peculiar mucoid tissue, or a mucoid change and overgrowth of connective tissue first noticed in the skin; and Dr. Ord has pointed out that this deposit or transformation is seen in all parts of the body, so that the liver tissue is separated by similar ill-defined wavy tissue, and the same is seen in muscles, glands, skin, and certainly in the spinal cord, and probably in the brain. The patients have puckering about the eyelids, and albuminuria and renal disease may be suspected; but early in the disease, at all events, no albumen is detected, and it is found that the œdema is apparent, and does not pit on pressure, but is firm and resisting. The face assumes a shape which is well described by the term cretinoid, the lips become thick and extended, the cheeks over the malar bones have bright congested capillaries, and the *alæ nasi* are thick. The cutaneous surface becomes dry and harsh, the temperature reduces, while the expression of the patients is dull, and they are very slow in appreciating and answering

- . questions; their speech is slow and peculiar, the memory defective, and the gait staggering, though there is no "limb paralysis." The sufferers generally feel their weakness, and are depressed in consequence; there are generally no hallucinations, but there may be perversions of taste and smell. In some cases delusions occur, while in others restlessness and excitement, amounting even to maniacal paroxysms, may supervene. One very important question to be decided, Dr. Savage says, is whether the mental dulness is due, as Dr. Ord thinks, to the padding of the peripheral extremities of the nerves, so that the constant healthy nerve stimulation is cut off—a kind of central nerve starvation; or whether the mental symptoms are due to primary disease of the brain, or padding round the nerve cells of the centres. Dr. Savage's own feeling is that the dulness and delusions are more likely to arise from primary brain change, or, at all events, to change of nutrition in the brain. The paper is illustrated with two autotype reproductions of cases of the disease under the care of Dr. Ord at St. Thomas's.

Diagnostic Significance of Absent Patellar Tendon Reflex.—In a paper published in the first number of a new periodical—*The Alienist and Neurologist*, January, 1880—appearing at St. Louis, U.S.A., Dr. C. H. Hughes, of that city, records a number of cases in which the tendon reflex was either absent or exaggerated, from the results of which he concludes that, while absent patellar tendon reflex is often of significance as an associated symptom of present locomotor ataxia, and may even serve when unassociated to excite suspicion of its approach, we are not justified in regarding it, when it is the only phenomenon observable, as a certain *sign*; or, when it is absent and the other symptoms are present, in excluding a diagnosis of posterior sclerosis. It cannot have the diagnostic significance claimed for it when it may be observed in indubitably healthy states of the cord, and when the reverse condition of exaggerated excitability may undoubtedly be found in cases of unquestionable posterior spinal sclerosis.

Dr. Otto Berger (in the *Centralblatt für Nervenheilkunde*, No. 4) discusses the same subject. Out of nineteen cases in which there was no derangement of the co-ordinating power in the lower limbs worth speaking of, there was in seventeen cases complete failure of reflex action of the tendon of the patella and tendo Achillis. Out of eighty-two cases of well-marked tabes dorsalis, the reflex of the tendon of the patella was absent in 2·4 per cent. But of these eighty-two observations there were four instances where the reflex

failed only on one side—three times on the left and once on the right side. In order to ascertain how often this action failed in healthy people, he tried it in 1,409 cases with the following results:—

1. The vigour of the action of the patella tendon reflex varies within very wide limits. In numerous cases the action is so slight that it requires great care to bring it out at all. Thus in many individuals it appears entirely to be wanting, but in the end was brought out. In many cases, on the other hand, the reaction is so lively that a light tap with the tip of the finger was sufficient to call out a powerful jerk, and, not infrequently, instead of a single muscular contraction, there were several movements of flexion and extension following upon one another. Here we succeeded, through the methods of investigation recommended to be used by Erb and Westphal, in demonstrating the clonic form of reflex of the patella tendon. It does not appear correct to speak of the pathological increase or diminution of the reflex action of the tendo patellæ. It is only the absolute failure of the reflex, with some rare exceptions, and the demonstration of a lively reflex in some other muscles, in which the action is not usual, that show a morbid condition.

2. The patella reflex failed in twenty-two healthy people—that is, 1.56 per cent. In these individuals it was repeatedly tried, and under all possible precautions, but in no case was any trace of the phenomenon perceived. They appeared to be all healthy people—thirteen of them being soldiers. There was nothing abnormal about the knees, and the mechanical and electrical excitability of the quadriceps muscle seemed to be as great as usual. Dr. Berger was thus obliged, against his previous experience, to admit that the reflex action might fail in healthy people. In no instance did it fail on one side only.

3. Of all other reflex actions in tendons we can, in general, most easily bring out that of the tendo Achillis; but it was found that this failed in 20 per cent., and often could only be demonstrated on one side. It was found that the peculiar foot phenomenon (the characteristic reflex action) is quite exceptional in healthy people. He had seen it only in three young men, though in a very decided measure. One of them had formerly suffered from convulsive tic. None of the three were surprised at the remarkable action, since they knew from childhood that they had a trembling of the leg whenever they sat down and touched the ground, even with the

point of the foot. Dr. Berger tried the reflex of the adductors and the biceps and triceps of the arm in 364 persons. He found the reaction of the first muscle only in 5 per cent. In two of these instances the reaction was one-sided, and in one there was a contraction in both legs, with the stimulus only on one side. In the biceps he found the reflex in 35 per cent., in the triceps in 25 per cent. Examination of other tendons led to no distinct results.

4. Several times, on the mechanical stimulus being applied to the tendon of the adductors, there was a contraction of the quadriceps, and on one occasion a contraction in the adductor region on percussion of the tendon of the patella of the opposite side. Dr. Berger has described a similar reaction in hemiplegia. Strychnia increases, and morphia diminishes, the liveliness of the reaction. In his last paper on the subject, Westphal has advanced the opinion that the failure of tendon reflex is especially valuable as a pathognomonic symptom in those cases in which the tabes begins with spinal amaurosis—the so-called optic white atrophy. The failure or presence of the patellar tendon reflex is here the characteristic sign of a distinct disease, or the first stage of the sclerosis of the posterior columns. Dr. Berger has a patient—a woman aged twenty-seven—who has been blind for seven years. She had no spinal disease, but there was total failure of the patellar tendon reflex. Dr. Berger thinks that spinal disease may yet follow. Out of 84 blind men in the Blind Asylum in Breslau, Dr. Berger found 9 suffering from atrophy of the optic nerves, and in two of these the tendon reflex was absent, whilst in the other 75 cases of blindness it failed only once. In four cases of diphtheritic ataxia, after paralysis of the pharynx, he found an entire absence of the patellar tendon reflex, the cutaneous and muscular sensibility being unaffected, but on complete recovery from the ataxia the tendon reflex also returned. The want of co-ordinating power in the legs resembled the ataxia from disease of the cerebellum rather than that of tabes dorsalis, reminding one of the gait of a drunken man. In a case of cerebellar ataxia, which came under Dr. Berger's observation, the patellar reflex action was very marked.

Dr. Westphal, in a communication made to the Berlin Medical Society, gives his latest views as to the value and significance of tendon reflex. He considers it one of the earliest symptoms of tabes dorsalis, meaning by this gray degeneration of the posterior columns of the cord. It is a valuable means of diagnosis where simulation is attempted. In ataxia of the lower extremities, where

the sensibility to the interrupted current is heightened, the reflex action is greater than usual. Dr. Westphal doubts if the reaction of the ligamentum patellæ is ever found wanting in healthy individuals. He always has found it present, and in one case of reported failure he had no difficulty in bringing it out. He uses a percussion hammer, and recommends that the knee should be laid bare, and the quadriceps not held too rigid.—(Dr. Ireland, in *The Journal of Mental Science*.)

The Cremaster Reflex.—Dr. Weir Mitchell (*Am. Journ. of Nerv. and Ment. Dis.*) has recently been making a fresh study of the phenomenon of the cremaster reflex, to which he called attention previously in his work on "Nerve Injuries," in 1872. He states that the extreme uncertainty of this reflex in healthy adults, its variability, as well as its normal irregularities—such as double reflex, and single crossed reflex—make it of little value in symptomatology, or as of diagnostic significance in spinal disease. He has, however, obtained some curious and physiologically interesting results, which he records in the paper he has published. In a footnote he remarks that the tendon reflex (patellar) has been examined with care in his clinic, and in his private practice, in a large number of cases, and may, he thinks, be looked upon as one of the most sure, and also one of the earliest, signs of uncomplicated posterior sclerosis.

IV. NEURO-THERAPEUTICS.

The employment of Atropine in Chronic Enteritis amongst the Insane.—In the *Annales Méd.-Psychol.* for May last, Dr. Moreau, of Tours, has a note on this matter. He says:—"In the number of the *Annales Médico-Psychologiques* for May, 1878, Dr. Dufour, Physician-in-Chief to the Asylum de Saint Robert, profiting by the experience of Prof. Vulpian in the employment of atropine against the sweats in phthisis, bethought himself of using this drug to check sialorrhœa amongst the insane. In the service of Dr. Moreau at the Salpêtrière the undoubted efficacy of this drug against excessive salivation has been ascertained; and as a confirmation of the value of the treatment attention is here called to another point. Having under his care two women—one a dement, the other a general paralytic—attacked with intractable serous diarrhœa, which had resisted all known ordinary means, pills containing $\frac{1}{2}$ to $1\frac{1}{2}$ m.m. of atropine were given to the patients, without there being any necessity to increase the dose, as in from four to six weeks the

diarrhœa was arrested. In the case of the paralytic, the treatment having been interrupted in consequence of a remarkable amelioration, the diarrhœa reappeared. The atropine pills quickly checked this relapse. As a measure of prudence the use of the drug was continued for some days after the complete cessation of the diarrhœa, and so far the amelioration has been maintained." Dr. Moreau thinks it useful to call the attention of his *confrères* to the benefits which may accrue from the use of atropine in the treatment of chronic enteritis, which every year carries off so many patients, and he would be glad if any new observations confirmed those which he has recorded.

Uses and Abuses of Chloral Hydrate.—In a paper published in *The Journal of Mental Science* for April last, Dr. G. H. Savage gives his opinion on the use of this drug, and the reasons which have led him to form such opinion. He considers that it has signally failed in every one of the promises that had been made for it. He says that in asylums for acute cases chloral is not necessary, and is often harmful. He proceeds to treat of chloral—first, as a possible cause of insanity, and next as a remedy:—"As a cause, he has seen its constant use for one or two years produce melancholia, associated with great prostration, loss of flesh and strength, a sallow, worn aspect, great irritability and nervousness, with strongly suicidal tendencies. I have," he adds, "the experience of several personal friends—men who were working hard with their brains, and who suffered from sleeplessness. These found chloral a boon at first; but, by continuing its use, they lost in physical health, and the sleeplessness became more unbearable. It is rather difficult to explain this more active sleeplessness, but, doubtless, many of my readers know the less distressing stages of it. The chloral-taker often, on going to bed, after a hard day's work, feels not only unable to sleep, but actively, restlessly wakeful, so that he is unable to remain for more than a minute in one posture. There is no special or pleasing flow of thought, no equal brain activity, but often a feeling of depression, and a dreadful impulse to injure oneself without any object or cause of woe. This impulse was described rather as a feeling like the one impelling people to throw themselves from heights.

"In assuming that chloral was a cause of insanity, I must admit that often it was only one cause. The chloral-taker was sleepless from brain exhaustion, or brain irritation, from over-work or over-stimulation, and in some cases had inheritance, but this is true of

many other causes. A shock or a blow may only produce insanity under similar circumstances. I have seen one case of insanity follow the suicidal taking of an enormous dose (two ounces) by a person used to excess of stimulants and the habitual use of chloral. This case became slowly weak-minded, and did not recover. In this case there was doubt expressed by at least one authority on the part played by the chloral, as there were added other serious causes of trouble; but the fact remains that until the large and almost fatal dose was taken marked insanity was absent.

“In several other cases the prolonged use of increasing doses of chloral seemed to develop ill-health and melancholia, and refusal to take food. In one the husband took a fatal dose, and his wife, who was also a chloral-taker, became insane.”

Other cases, showing the same mal-influence of the drug on mental health, are cited; and then Dr. Savage passes on to say what he believes to be the uses of the chloral:—“It has been used in—1st, sleeplessness; 2nd, in various forms of insanity; and 3rd, in various stages of epilepsy. In reference to the first, I have seen sleep produced by chloral when the wakefulness was not due to pain; but if this sleeplessness was the initial stage of insanity, I have not seen the attack warded off by the sleep. In a few cases where overwork or anxiety is affecting the health, a single dose of twenty-five grains at bedtime is of service, but I should rarely give it regularly. For simple sleeplessness in the brain-worker who has little or no bodily exercise, sleep may be induced, and work got through that could not have been done without some sleep; but, in my experience, this is done by drawing on the capital of energy, and, if pursued, will end disastrously.

“In a few sleepless persons chloral seems to act uniformly well, and does not require increasing doses, and does not affect the appetite or general functions. In such cases it may be of great service. I believe, however, that simple sleeplessness is much better treated by other general measures before chloral is tried.

“2nd.—In some cases of maniacal excitement the patients are controlled and made manageable. According to some authorities the sleep induced in some of the most violent of such cases saves them from death by exhaustion. This seems probable, but in practice I find stimulants and abundant light food act just as well.

“In some cases of recurrent mania, with great violence, the drug has been given in large and repeated doses, gradually increasing

till at length we have reached two drachms every four hours, and no beneficial result has followed.

"In melancholia one does not get good results by either occasional or regular administration.

"In cases of insanity following blows, shocks, and the like, I believe that excitement is produced much like that produced by alcohol in injury to the head. In acute insanity with intemperance, a few cases were relieved with chloral.

"In speaking above of the treatment, I refer to my experience of chloral alone. In some future papers I may speak of its combinations with other drugs. In the third group I place epileptics, and with these I have greater faith, but less experience. I know of no good results following the use of the drug in simple epilepsy, but in patients who have *furor* associated with the fits the benefit is very great and very certain.

"I have frequently seen a case that without chloral was dangerously maniacal for several days, sleep quietly after thirty grains of chloral, and wake up sane, having had an epileptic fit, but no *furor*. Every fit that was not followed by a dose of chloral was followed by a fit of mania. Summed up, my belief may be thus expressed—that chloral may produce physical ill-health, hypochondriasis, and insanity. It may relieve epileptic *furor*, but cannot cure epilepsy. It may produce sleep in some cases with advantage, but more commonly disadvantageously. It may be used rather as restraint than as treatment in violent cases."

Hysterical Hemianæsthesia Cured by the Application of a Magnet.—Dr. Hesse (*Centralblatt für Nervenheilkunde*) had a patient, twenty-two years old. The uterus was small, the vagina narrow, and she had never menstruated. Until the last four years she had been in good health. She then became affected with diminished sensibility to touch and cold on the left side. There was amblyopia in the left eye, with diminished perception of colours, as ascertained by a careful examination. There was tenderness over the region of the left ovary.

She was treated with a horse-shoe magnet, weighing two pounds, applied to the back of the arm, and in twenty-five minutes sensibility returned to the entire of the affected half of the body. There was no transference of the anæsthesia to the other side. The left eye recovered its power of vision and capacity for distinguishing colours. Dr. Hesse observes that the parts pricked after the application of the magnet bled freely, whereas similar punctures

made the day before left no mark on the skin, and did not bleed. The author concludes with a statement of his belief in the efficacy of the treatment of hysterical hemianæsthesia by the application of magnets, or weak galvanic currents, which he had himself witnessed in Charcot's clinique at the Salpêtrière in the spring of 1878.

Drs. Maragliano and Seppilli, in the *Revista Sperimentale*, have given the results of their experiments on *metalloscopy*. In hemianæsthesia of cerebral origin the sensibility is restored not merely at the point of application, but over the entire side. The special senses are restored, as well as that of touch. The restoration of sensation is more permanent in cases of organic than in those of functional anæsthesia. They ascribe the action of the various substances employed to the development of electrical currents, which influence the vasomotor and sensory nerve fibres.

Metallotherapy.—Dr. Franz Müller (*Centralblatt*, No. 2, 1879) is surprised that English physicians seem generally agreed in putting down the results obtained by Charcot to expectant attention or other mental influences. Dr. Müller himself visited the Salpêtrière for three months, and was able to ascertain that the application of plates made of non-metallic substances was followed by no result. He has seen patients successfully treated for hemianæsthesia blindfolded, and without knowing the nature and object of the treatment. He has found that the action of magnets is more efficacious than that of plates of metal. Dr. Müller has carried on independent experiments in the hospital at Gratz, with the same results as at Paris.—(Abstracted in *The Journal of Mental Science*.)

At the meeting of the British Medical Association in Cork, I brought before the Section of Psychology the record of a case of hysterical hemianæsthesia, in which the application of zinc discs brought about rapid and, so far, permanent cure of the hemianæsthesia.—(*Vide Brit. Med. Journ.*, Nov. 15, 1879.)

LARYNGEAL HÆMORRHAGE.

DR. WAGNER (*St. Louis Medical and Surgical Journal*, No. 37, 1879) describes a case of bleeding from the larynx, in which the hæmorrhage was profuse and frequent. There was no lung mischief. When the laryngoscope was used, blood could be distinctly seen oozing from the left ventricular band and left ventricle. The author has had several other cases of laryngeal hæmorrhage, similar to the above in character and symptoms.—*Lond. Med. Record*, Feb. 15, 1880.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Disease of the Knee-Joint.—DR. BARTON said: This leg was removed by me from a girl, aged fourteen years, on last Tuesday morning. She was admitted into the Adelaide Hospital for the first time in May, 1878, and the limb then presented the appearance of disease of the knee-joint of two years' standing; I have a cast of it in that stage. She gave no history of any injury of the joint, but it had evidently undergone considerable change, as the knee was swollen and partially flexed. She could bear to put her foot on the ground, and even to rest some weight on the limb, but could not straighten the latter. The knee presented no fluctuation, but considerable thickening. The chief seat of pain, then, was the inner condyle of the femur, which projected considerably. At this period—namely, May, 1878, there were no sinuses or abscesses whatever; she was placed under treatment, and after a month or six weeks left the hospital for the country with a splint supporting the limb; the pain diminished, and the swelling decreased. She was readmitted in April, 1879, with the limb much worse. There was now suppuration; abscesses had formed at the lower part of the femur, where sinuses led to the bone, which are still visible in the lower and outer part of the femur, and also from the inner side, where they lead down to the diseased joint. No probe that was passed through reached any diseased bone. They all led down towards the joint, but I never was able to touch diseased bone through any of the sinuses. This time she remained for a considerable period under our care, and there was considerable suppuration. I endeavoured, by means of washing out the sinuses with a solution of chloride of zinc, followed by careful antiseptic dressings, to arrest or diminish the suppuration which seemed to run down her strength. This succeeded to a certain extent. As the summer was then opening, she was advised to go to the county of Wicklow, where she had resided,

in the hope that by perfect rest of the limb in a splint, aided by general treatment, the disease might subside. However, she was readmitted this month with matters a great deal worse. The suppuration had proceeded to a great extent, and the limb was in a hopeless state. Amputation was evidently necessary, and I performed that operation on Tuesday last. From the presence of the sinuses and the long duration of the disease, we considered it necessary to amputate so high up the femur as you see. In the limb now before you there are two points of pathological interest. First, the joint has undergone complete disorganisation, so far as the cartilages are concerned, these being totally and entirely removed. Ankylosis was evidently progressing, for as I opened the joint the adhesions gave way. The chief position of the disease appears to be not where we thought, but in the inner head of the tibia, which presents the greatest amount of disease. The knife passes freely to the bone, and there is a large amount of carious cancellous structure. The inner head of the tibia is softened, but not markedly so. The femur does not present at all the same amount of carious destruction—hence, while the chief seat of the disease was the head of the tibia, the sinuses led us to believe that the lower part of the femur was at least as extensively, if not primarily, engaged. The bone at the point of section is sound, the periosteum is healthy, and amputation might have been performed somewhat lower down with safety. A further melancholy interest attaches to the case beyond what I have stated. The girl was exceedingly anæmic, and in the examination before the operation, which was very carefully conducted, there was discovered to be a very distinct bruit with the first sound of the heart. An Esmarch's bandage was employed in the operation to save her from loss of blood; it proved effectual, and the operation was bloodless until the pressure was removed for the purpose of securing the vessels. On the morning after the operation a gush of hæmorrhage occurred from the stump, and though it was immediately controlled it proved too much for the strength of the patient, who died the following evening. The facts were these:—The Esmarch's bandage was applied, as I said, during the operation, and the elastic tube was applied high up on the thigh, from which the operation was absolutely bloodless. This pressure was, of course, removed when we proceeded to tie the arteries, and the femoral artery was controlled simply by a pressure of the finger. It was secured, and four other vessels were ligatured. All bleeding was thus stopped, all pressure was then removed, and the wound was entirely free from any bleeding whatsoever. The operation had been conducted under the most careful antiseptic precautions; but, although a good deal of fluid flowed from the surface of the stump, there was no hæmorrhage. The flaps were then adjusted, the stump dressed, and the patient removed to bed. No hæmorrhage occurred for the remainder of that day. A tourniquet was kept loosely on the

limb, and she was closely watched. At nine o'clock the following morning she suddenly complained of severe pain in the stump, and became deadly pale. The dresser on duty, upon examining the stump, saw that there was blood on the sheet. The tourniquet was screwed down at once, and the femoral artery controlled, and within half an hour I was there, and opened the stump. I found the flaps distended with clots, and on removing the sutures two small vessels were tied—one of them in the hamstring muscles, the other in the adductors. Not much blood was lost. The patient's state was, however, exceedingly low. No further bleeding occurred after this. Her state at this period was not altogether hopeless, and her pulse was fair, though her lips were pale. Every means of restoration was used throughout the day, including transfusion of three ounces and a half of blood in the afternoon, but she made no rally, and died at nine o'clock. Remembering the bruit in the heart, I asked Dr. W. G. Smith, our pathologist, to examine that organ and give me a report on it. He found a white clot on the right side, and an exceedingly thin auricle. The left side of the heart was thick and well nourished, with a puckered and somewhat contracted mitral orifice. The question is, how could the bleeding have occurred, all the bleeding vessels being secured in the usual manner, and the ligatures being all safe and sound? I think the explanation was that the tube of the Esmarch's bandage was exceedingly tight; and it is very possible that the mechanical pressure, in the case of a weak circulation such as this girl had, was sufficient to temporarily hold together, from the squeezing of the limb, arteries of the second calibre, and that these were squeezed together for the remainder of the day, and did not bleed until they became dilated by the circulation, when reaction had been freely established. This affords a warning for other cases, and also shows why other means failed to restore animation. I suppose that the white clot had formed at the time, and that it was the means of preventing the circulation from being restored.—*December 13, 1879.*

Membranous Croup ; Tracheotomy.—DR. E. H. BENNETT said: These are the trachea and lungs of a child of two years old on whom I operated some short time ago for croup. The interest of the case is confined to two points, for the specimen throws no new light on the pathology of croup. The points to which I would direct attention are certain complications which probably proved fatal, and also the proceedings which were adopted for the relief of the child—at least so far as they are connected with the pathology of the case. The child had been ill only for a single day previous to admission into the hospital by Dr. Purser on the 15th of October. His examination, made between ten and eleven o'clock in the morning, proved that the child was suffering from ordinary croup without any signs of diphtheritic membrane being present—

that is, there was no evidence that the croup belonged to the essentially diphtheritic class. Dr. Purser considered that the ordinary medical treatment of the case, by vomiting, and so on, would probably succeed in arresting the disease. He examined the chest very closely and came to the conclusion that there was no chest complication whatever. We must place the greatest reliance on this point of the diagnosis, because we know sufficiently well Dr. Purser's accuracy in such matters, and we may therefore fully rely on his assertion that the chest was, on that morning, free from complication. He saw the child in the afternoon, and then the condition was not improved. Vomiting had not occurred with any freedom at all events; the condition of the child was much worse, and he sent for me to see it with a view to operative relief. I saw it within half an hour, and at first thought the child was *in articulo mortis*. It was blue, perfectly cold, covered with cold sweat, and there was so very little respiratory movement that I thought it was dead. It had suddenly run down to a degree far below anything that Dr. Purser anticipated half an hour previously. The stimulus of a small quantity of wine brought on reaction and roused the child, and it drank milk with great greediness, and seemed to rally so completely that even I thought, for a moment, that we might still defer operative proceedings. However, the indraw of the abdominal wall showed that the case had gone beyond ordinary medical treatment, and within half an hour afterwards we operated. No accident occurred during the operation—that is, hardly a drop of blood was spilled, and the tube was introduced with great facility. The child immediately afterwards vomited an immense quantity of milk and also the medicine which it had received previously. After this it fell asleep, and at ten o'clock a very remarkable change had taken place. The temperature was then 104° , but in the middle of that extreme heat of the entire body the child's breath was deadly cold. That condition changed about midnight. The child began to perspire, and immediately its breath became warm, and in the morning matters looked as if it would recover. The surface was down to almost the normal temperature; the child was sleeping with the greatest ease and breathing freely; there was only one symptom of an unfavourable character—namely, an incessant grinding of its teeth, and we could hear the sharp ring of this every two or three minutes across the ward. This was the only indication of delirium. About mid-day it awoke from its sleep and became convulsed, and a series of convulsions followed, in one of which it died. The important point in the case is with reference to the lung. On percussing the chest immediately before the operation I was satisfied that pneumonia existed, and Dr. Purser, on examining it, came to the same conclusion. Our only index was the percussion. The left side of the chest was very dull towards the base, and the whole area of the left side was abnormally dull compared with the opposite side. It was clear

then that the pneumonia had developed between the morning and the evening. The rapidity of the disease was unusual. The child's illness had lasted only a day previous to its admission. It had been going about perfectly well forty-eight hours before the operation. There was no pneumonia in the morning, and yet in the evening there was evidence of consolidation, if not of an entirely solid lung. At the time of its death, at one o'clock next day, the greater part of the lung had become absolutely solid. The rapid development of the pneumonia is extremely important. There are two points of importance in connexion with the operative proceedings. The line of incision which we adopted was through the crico-thyroid membrane, the cricoid cartilage, and the upper rings of the trachea. This is the mode of proceeding of Boyer, contrary to what many authorities consider the right practice. I put it forward as the form of operation which can be done with the greatest facility and exactness, and which is perfectly efficient in relieving the respiratory symptoms. One other point is that in every case of tracheotomy in which I have operated—and I have done so for almost every one of the diseased conditions for which the operation is practised, both in the adult and in the child—I have performed the form of operation of which I speak with only one exception—namely, a case in which a foreign body had to be removed. The point of pathological interest is that this operation can be done without damage to the larynx, and without subsequent injury to the functions of the voice. The greatest authority of the present day on this subject—namely, Mr. Spence, of Edinburgh—lays down the rule that the proper proceeding is to operate below the isthmus of the thyroid. Why this is done, except as a matter of habit, I do not know, because it is a vastly more difficult and dangerous proceeding. I make no apology for bringing forward this case, because most of the members know that tracheotomy for croup is rarely performed in Dublin, in consequence of the objections to the operation put forward by the late Mr. Porter; and the result of his strong objections to it has been that very few of us have had any experience of the operation.

Mr. Spence records that in forty operations which he performed in croup, and others added for diphtheria, making a total of ninety-five cases, only one out of every three recovered. Even with this condition of affairs I think we should set aside the opinion of Mr. Porter and hold the operation to be admissible. It is to be borne in mind that Mr. Spence is no advocate for hasty operation—in fact, he insists that before proceeding to it we must have exhausted the means of medical relief.—*December 13, 1879.*

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1879-80.

President—ALEXANDER HARKIN, M.D.
Hon. Secretary—WILLIAM WHITLA, M.D.

December, 1879, and January, 1880.

ALEXANDER HARKIN, M.D., President in the Chair.

Specimen of Ovarian Cyst.

DR. J. W. BROWNE exhibited a beautiful specimen of ovarian cyst, which he had removed, some days previously, from a patient outside the hospital. He described the nature and supposed mode of origin of the cyst, and briefly related the points of interest in the clinical history of the case, but, as he would bring it up before the Society with other cases of ovariectomy which he had performed, he only asked them to look at the cyst. The patient was progressing very favourably, and he could say the case was decidedly successful.

Ruptured Aneurism.

DR. M'KEE exhibited a ruptured aneurism, which was taken from a man who was found in Regent-street, Belfast, lying moaning. The gentleman who found him, believing he was suffering from intoxication, sent for a policeman, who said he stooped over him and found a strong smell of drink. He had him removed on a car to the police-office, but on his arrival life was found to be extinct. The aneurism—not a very large one, situate on the ascending part of the arch of the aorta—burst into the pericardium, so that he found that space filled with clots and serum. The opening was about three-quarters of an inch in length. The man's occupation was what is ordinarily known as a plateholder in a shipbuilding yard; he, consequently, would have to lift and sustain heavy weights, which might, to some extent, account for its origin. Owing to the peculiar circumstances under which the man was found, he thought the case would be interesting to the Society—it being mistaken for a case of drunkenness.

DR. DEMPSEY thought it rare to find such a specimen without atheroma. He explained this by a reference to the occupation of the subject from which the specimen was taken.

The PRESIDENT thought it interesting from several points of view.

He asked which of the coats had given way, or did all? If this latter, he would say it was a rupture from violence—if the former, he thought it should be put down as an aneurism. He entered into the surroundings of the case, which were interesting, as it was supposed at first to be a case of drunkenness. Therefore, as coroner, he ordered a *post-mortem* examination, which revealed the specimen to be an aneurism, and he spoke at length of such a case being brought to the police-office instead of directly to the Royal Hospital, where there was every accommodation for treatment, without the delay unavoidable at the police-office.

Encysted Hydrocele of the Spermatic Cord.

DR. CLEMENTS showed a patient, the subject of an encysted hydrocele of the spermatic cord. The patient, aged about eighteen, as far back as his recollection served, had observed this scrotal tumour, though he did not consider it anything unusual. His attention had been recently directed to it by the refusal of the regimental surgeon to pass him for the ranks of the army; and, in consequence, he came under his observation at the Belfast Dispensary. He considered the case worth showing to the members of the Society, both as a typical specimen of the encysted hydrocele, and on account of its comparatively large size. The spermatic cord can be distinctly felt passing out of the external inguinal ring, and its course traced for about two inches down to the posterior wall of the cyst, and can be again detected below, passing from the posterior wall of the cyst to the testis. The connexion of the cyst with the cord, both above and below, is definite and distinct, and the cyst is not extended along the cord in the form of a tubular prolongation in either direction. Four weeks ago he removed, through an aspirator needle, about one ounce and a half of hydrocele fluid from the cyst, which exhibited the usual characters of serum albumen, the cyst entirely collapsing. It has again collected, contains now, in his opinion, about two ounces of fluid, and it is his intention to again exhaust the contents of the cyst, and endeavour to excite adhesive inflammation by the injection of a small quantity of diluted tincture of iodine. Before doing so he was glad to have the opportunity of showing the members of the Society what he believed to be so typical a specimen of this affection.

DR. BROWNE had two cases—one in a man, aged forty-two years, and the other a boy of eleven years. In both he passed a seton soaked in tincture of iodine, and in both there was a cure.

The PRESIDENT thought it was such cases as these that they were glad to see. They were cases which could be treated so well outside, and hence possessed greater interest to the mass of practitioners. He had treated several himself. The seton he used was a common woollen thread.

MR. FAGAN had seen and treated a good number of these cases. Once

the diagnosis is clearly made out the path is simple. This was a well-marked case. All his cases were in children. He punctured, and allowed the fluid to get out into the tissues; a slight inflammatory action supervened, and the consequent consolidation caused such pressure as obliterated the cavity. He detailed various methods, and pointed out the importance of first seeing was there any connexion with the abdominal cavity. If this was the case, one should be careful before using injections.

Case of Herniotomy.

DR. WHITLA reported a case of herniotomy. He said:—Upon Oct. 4th I was called by a medical man to see a young muscular man, aged twenty-four years. His friends gave the following history:—In July last he discovered he had a hernia which was reduced by a physician, who fitted him with a truss which was so successful that in two months he threw it aside, the tumour having entirely disappeared. Upon Thursday, Sept. 29th, at 12 p.m., he awoke from an hour's sleep, having gone to bed fairly well, and smart vomiting occurred, with vague abdominal uneasiness, which passed off, leaving him suffering from obstinate and most painful vomiting, which continued in severity till he saw him. He had been attended by a physician whose attention had not been arrested by the suspicion of a hernia, and who treated him with preparations of bismuth and morphia. Upon the following Thursday (the 4th October) another medical man was called in, who discovered the presence of a hernia, and sent me an urgent message to come and see him. I found a tumour in the groin about the size of a small hen's egg, red, painful, and very tender, possessing all the characters of a small inflamed strangulated inguinal hernia. There was complete obstruction of the bowel for six days; there was great tympanites, and constant vomiting of offensive matter, and the patient seemed fast sinking. He had refused to go to hospital, and begged to be relieved by any operation which would give him a chance for life. I rather reluctantly consented to operate, as I feared it would be almost useless. Chloroform was administered by Dr. Quinn; and after a very gentle trial, which convinced me that taxis was unjustifiable, I operated. There was nothing of interest in the operation itself—the sac was very easily exposed, and finally I found it necessary to expose the bowel, which was almost black; the constriction was surprisingly tight, and the margin felt like a little ribbon of steel tied round the knuckle of bowel. One cut of the knife divided this, and I returned the bowel, not into the abdominal cavity, as I had mostly seen it done, but following the advice of my respected teacher, Professor Gordon, I simply left the knuckle of gut about the internal abdominal ring; its condition did not justify its return entirely within the cavity, and I thus hoped I might give my patient the additional chance, if the bowel sloughed, of an artificial anus. After the effects of the chloroform

passed off, he passed wind by the anus; there was complete and speedy relief of all his symptoms. Free doses of opium, one grain every four hours for first day, and half this quantity the second. The bowels did not act for five days; then they did so naturally, and in three weeks he had a truss fitted on, and is now at his business—a draper's assistant. I would hardly have considered it worth bringing under the notice of the Society but for a few points of interest to which I would briefly refer—first, the period of strangulation was very long for a good recovery to follow; and, secondly, it is the fashion to bundle off all such cases to hospital, and I have no hesitation whatever in asserting, had this patient been removed to hospital, he could hardly have survived; the removal and jolting of a hernial subject in his condition must almost necessarily be followed by fatal results. I fully appreciate Dr. Fagan's remarks about the death-roll being increased by the abuse of the taxis. This leads me to look at an entirely new aspect of the hernial question. Looking at it purely from a "psychological" point of view, one could easily see why the death-roll was so increased. I would not insinuate the least blame to the general outside practitioners; and keeping in mind the complex elements of human nature at play in these cases, no one could blame them. A young man outside hospital will not send in a case of hernia for operation until he has demonstrated fully to himself that it will not go up, for if reduced on admission there will be to his mind some amount of stigma thrown upon him by the ignorant patient and his friends, and the consciousness of this tempts him to try the taxis to the utmost; and though this is but an evidence of weakness from the nature of matters, it must always exist, and should be recognised (though perhaps humiliatingly) in the treatment of the question. I refer chiefly to the hernia cases occurring amongst the poorer classes—hospital cases. If hospital surgeons would agree to visit, before removal, all hernia cases with the ordinary practitioner or poor law medical man, I think hernia would be more satisfactorily dealt with.

DR. FAGAN thought it pleasant to see a success after so long strangulation. There could be no doubt whatever about the wisdom of the procedure. Surgeons now all recognise the advisability—nay, the necessity—of not returning the bowel within the abdominal cavity in cases where the bowel is very much strangulated. He detailed cases illustrative of this. He spoke at some length about the conduct of practitioners outside in using the taxis to so great an extent as they generally did, thus swelling their hospital death-roll.

DR. J. W. BROWNE said he thought the sac should always be opened in hernia of many days' strangulation. He had operated upon his nineteenth case of hernia three days since.

DR. DILL said taking these two operations, having been performed outside the hospital—the case of hernia and the one of ovariectomy—they

supported a view he always held that, without disparaging hospital practice, he could have far better results outside. He quoted, from Savory and others, statements about the antiseptic treatment which illustrated his views, and referred to the condition of the atmosphere in large hospitals in densely populated districts, and contrasted the advantages offered by the patient's home and its surroundings, however humble.

Victoria as a Health Resort. By ROBERT ESLER, M.D.

MR. PRESIDENT—There is no fact, I think, better established in the present day in connexion with the practice of medicine than that of the promptitude with which patients act in the matter of change of climate on the advice of their physician. The hand-books on medicine profess to give directions on this topic, and special treatises are published setting forth the claims of various health resorts, and from time to time articles appear in the journals giving the individual experience of members of the profession, and we constantly hear of our merchants and gentry going for a trip down the Mediterranean or up the Rhine, or wintering at Algiers, Cannes, or Mentone, because they have been ordered to do so by their doctor. It has come within my own knowledge during the few years I have been resident in Belfast that even the Antipodes are not considered too far off for either a trip or a more extended residence for those threatened with pulmonary disease, and I have been consulted frequently, not only on the point of health, but on that of climate, business, profession, and general prospects, regarding that part of the colonies where for eight years I was resident. The information I have given to my patients I purpose in a short paper to now lay before you, and I propose to do so under three heads:—First, the patients who should go; second, the route by which they should go; third, the place to which they are going—and in the treatment of the subject I shall reverse the order, and take the last head first.

I might have made my subject Australasia, which term includes with the Australian colonies the Islands of New Zealand and Tasmania, but as my personal experience is limited to the colony of Victoria I shall ask your attention more particularly to it. Its position on the globe is on the thirty-fourth degree of latitude and between the one hundred and fortieth and one hundred and fiftieth longitude. In extent it measures three hundred miles from its northern boundary to the sea, and five hundred and sixty miles from east to west. Its area is nearly that of Great Britain. Of all the provinces on the island continent it is the most populous, most prosperous, and most wealthy, and yet its entire population is only about three-quarters of a million, the one-third of whom reside in the metropolis, Melbourne, and its suburbs. It is a new country. Its founder landed in 1836, and only for its gold fields it might not for ages have attracted the notice of men in these northern climes. It is of

less importance to send a patient to any health resort as a temporary residence than as a place of permanent abode. In the former case they are seldom disappointed, in consequence of the charm of variety, while in the latter there are various considerations to be borne in mind, such as agriculture, commerce, manufactures, educational advantages, and the openings and prospects for the rising generation; but to none of these subjects can we give consideration in this paper. The questions we must discuss are—climate, health, and longevity, and the effects of the climate on consumptive patients or others suffering from chest affections. The climate of Victoria is acknowledged to be one of the finest in the world; the temperature is moderate. It is true the range of temperature is great—between freezing point in winter and a hundred and twelve degrees in summer there is a great contrast, but these are extremes; seldom does the thermometer fall below 45° , and as seldom does it rise above 80° . The mean temperature of the hottest months is 66° and of the coldest 48° ; frost and snow may be found on the highest mountain ranges in winter, but through the colony generally when ice forms during the night it melts with the rising sun. Hot winds prevail during the summer months, and this is certainly the most trying time, and the time of most uncomfortable experience to the colonist. “A brickfielder” which transfers some tons of dust or sand from one end of a town to the other end cannot be contemplated with composure, much less with delight. Yet the wheels of commerce do not stand still on this account—the trader bargains, the farmer cuts his crop, the traveller speeds on his way, and the physician on his rounds, much the same as at other times. These hot winds last, as a rule, only about three days at a time, and are followed by a deliciously cooling southern breeze or a refreshing shower, which seems to set nature right again. The seasons are different from home—there is the wet and the dry season; the former—May, June, and July—is more like our April showers than the British idea of a rainy season. Yet there are times of heavy rainfall and blustering, windy weather, when the creeks are flooded and the canvas tents on a digger’s rush are suddenly transferred by a cyclone from the gully in which they stand over the adjoining hill-top. The most usual months for floods, which are occasionally destructive, are September and October, when the rain falls in thunder-plumps. Bush fires are not uncommon in December and January, and occasionally miles of the country may be seen in a blaze of light, carrying destruction in its track. These are some, and, I think, the principal disadvantages of the climate; while, on the other hand, the positive enjoyment of spring and summer is very great. A cloudless sky; a summer heat not too great to interfere with duty or pleasure; the atmosphere light, dry, and genial, imparting comfort to the body and hilarity to the mind; the air scented with the rich aroma of the wattle bush; and the gum-tree tinted with the rich plumage of the

noisy paroquet, making the bush one vast aviary, imparts to the traveller a sense of comfort and delight which gives mere existence a charm of which dwellers in humid and colder climates can form no conception. An old colonist says:—"There are days when, with good health, the surroundings must make one happy—days on which there are brilliant floods of sunlight and warmth—the heat modified and pleasant; the atmosphere pure and dry; the breeze soothing and refreshing; the sky softly blue, or ever changing with thin cloud flocculi; hill and dale clothed with spring verdure; the earth and air teeming with joyous life. On such a day the pulse of life beats joyously, and the soul that is not chained by earthly care or bodily infirmity may enter into Nature's great calm, and revel in an ecstasy of delight, saying with Longfellow—

'It is enough for me
Not to be doing, but to be,
Through every fibre of my brain,
Through every nerve, through every vein,
I feel the electric thrill—the touch
Of life that seems almost too much.' "

With such a climate we may look for a healthy population, and in this we are not disappointed—there is everywhere the appearance of cheerfulness, cleanliness, activity and health. One exception may be referred to—from the habits of the early settlers in camping out at night and sleeping under no thicker roof than that of calico, one is not surprised to find rheumatic affections of the joints rather prevalent; but with more comfortable edifices and a less exposed life it is not likely that this state of things will be repeated. Epidemics such as visit Europe have been hitherto unknown, and the colonial fever of the first settlers has almost disappeared. The country is yet too young to ascertain the longevity of its inhabitants, but the death-rate presents a very favourable contrast with Britain, being 11 as compared with 23. Accidents and the race for riches, often ending in disappointment and untimely death, have greatly added to the mortality; but in these respects every year is bringing about a better state of things.

Now, coming to the main question—"Is the Australian climate likely to be favourable to the health and well-being of phthisical patients?" I unhesitatingly answer, Yes. There you have the conditions most requisite for a comfortable existence—a dry, warm, mild climate, light, bracing atmosphere, and a range and variety of temperature in the various colonies which will enable one to make choice of every conceivable variety in a few days; for, while I have spoken of Victoria as somewhat medium and typical, there is the more southern territory of South Australia, or the more northern colonies of New South Wales and Queensland; and for colder climes, there is New Zealand, or the Island of Tasmania, which is spoken of as the garden of the earth.

Having decided upon sending our patient to Australia, a not unimportant point will be, secondly, the route by which they should go. For comfort and enjoyment, and where time is no great object, there is no doubt that a first-class sailing ship, such as Wigram's or Green's, of London, affords a rest and quietude not to be realised in a steamer; but, as a set-off, there are the calms of the tropics, and the cold of southern latitudes experienced in bearing down to catch the trade winds, which are anything but pleasant to a delicate chest; and, from personal observation, I should say that the voyage is generally too protracted for an invalid; yet we know that a long sea voyage is one of the conditions made essential by the most experienced medical men. The magnificent ocean steamers now plying by way of the Cape of Good Hope, or through the Suez Canal, afford a pleasant run of some fifty days, while for those who want more variety, and greater change, the route *via* New York, California, and Yokohama is available; but, on the whole, I would recommend either an emigrant or invalid to go by steamer, as being quick, safe, and moderately cheap. The best time of year to arrive there is about February or March, just after the excessive heat of the summer is over, which would necessitate leaving here two months earlier by steamer, and three months by ship.

It is usually young unmarried men who are sent to Melbourne or Sidney for their health, and I am convinced, from experience, that grave mistakes are made in not sending them further. To remain in a city in preference to going up the bush, or on to a station, is leaving more than half the work undone. In Warnambool, Belfast, or the Wimmera districts, or on the Murray River, the life is so different, and, I will say, so suitable to an invalid, that the contrast between Melbourne and a sheep station is nearly as great as between London and Melbourne.

For a young man with bad health, bad habits, and a plethora of English sovereigns, a colonial town is about the worst place I know. We must remember that bad habits formed at home are not likely to improve amongst strangers with all restraints removed, and the continual temptation of fast colonial life. Man cannot fly from himself. A change of scene makes no difference in personal character; a colony can work no change in human nature; cannot prevent drunkenness coming to want; cannot inspire the day-dreamer with decision; cannot give force to the heart that quails; cannot force on those whose lives run backward; but I believe it can, and often does, arrest the development of tubercle if the patient puts himself into the conditions favourable to that end.

And now for our last point—the patients who should go. It is no uncommon thing for a passenger in quest of health to die in sight of land, and not a few have only landed to lay their bones on a foreign shore. These were sent months, or it may be years, too late. The only hope is in the early, I would say the very early, stage of tubercle. I

have met men doing their full share of this world's work who told me that if they had remained at home they would have been in their graves many years before. If any good is to be accomplished, it is by sending tubercular subjects while the disease is in the incipient stage, and, to my mind, it is cruel in the extremest degree to separate a patient from friends and home at a time when the Garden of Eden itself could not be expected to afford relief, much less to add to the patient's life. Most of the deaths from phthisis which occur in the colonies are those sent out from England, and yet the death-rate from this disease is 12 in Victoria as against 22 in England, and 14 from other diseases of the respiratory system as against 36 in England. The death-rate is much less comparatively for the country than the towns. In Melbourne, for instance, with one-third the population of the colony, more than half of all the deaths from phthisis occur. I have been speaking hitherto of individuals, but I think a stronger case might be made out in favour of families emigrating where there is a phthisical taint, and, in place of standing by, and seeing one after another fall under the certain shaft of death's arrow, I consider it the duty of medical men to recommend families with capital, energy, youth, and a love of life to emigrate to a more salubrious clime than that in which their birth has cast their lot, so that they might not only prolong their days, but enjoy life while they do live, and assist in building up that Greater Britain of the South, which is destined yet to play an important part in the councils of the empires or republics of the future.

DR. HARKIN said he was sure if Victoria was nearer to us there would as many take advantage of it as a health resort as now go to Egypt. He contrasted it with the climate of Cannes, and thought the great disadvantage was its difficulty of access.

DR. WITHERS asked particulars about the dryness of the colonial soil, and was told by Dr. Esler it was very dry—indeed rather too dry for the prosperity of the sheep-breeders.

DR. WALES said the subject had engaged his attention for a long time. While he thought that the sooner the patient was sent away the better, still he could not join in the wholesale condemnation of sending away at a later stage. He could recall very many cases, during his long experience, of men whom he sent away with cavities and full evidence of loss of lung substance. He detailed several cases, in some of which the patients went out almost against his commands, being seemingly too far advanced for a shadow of hope for a cure, and these in many cases turned out strong, healthy men, living still in the colonies, and leading active and laborious lives. He gave the particulars of two telling cases, in both of which there were cavities, and decided cures resulted. From what he had seen he concluded it was a very serious thing to say it was too late to send away a patient.

DR. M'KEOWN would not be disposed to go either as far as Dr. Esler

or Dr. Wales. Anyone acquainted with the history of the families of Belfast could recall *scores* of cases where the sons of the wealthy were sent off at the very earliest period of the disease, and their progress downwards was as rapid as that of those who stayed at home. He paid a very warm compliment to the labours of Dr. MacCormac upon the fresh-air treatment of phthisis, and expressed himself as doubtful about the climateric treatment of phthisis, except in so far as climate admitted of free exercise in the open air. He thought much depended on the temperament of the patient. If fond of travel, not home-sick, not afraid to die, then the probabilities are that travel and residence at various health resorts would likely be useful. If, on the contrary, despondent, the patient would probably be much better at home.

PROFESSOR DILL, in thanking Dr. Esler for his paper, drew the attention of the Society to the law of fashion in the treatment of disease. He referred to a recent article in *Blackwood*, and lamented the great difference of opinion upon various medical subjects, and no department showed this more thoroughly than the question of phthisis. He gave a detailed account of the new Alpine resort for consumptives, and contrasted the extraordinary discrepancy of opinions upon the climateric treatment of phthisis. He quoted from Dr. Bennet (Mentone), and, upon the whole, he agreed with the remarks of Dr. M'Keown. His experience absolutely verified what Dr. M'Keown had stated. He detailed cases illustrative of this—cases which beautifully counterpoised those so ably put by Dr. Wales, and he concluded by saying he thought, as in disease so in health, "there was no place like home."

DR. WORKMAN thought Dr. Esler had hardly given the Society sufficient information to decide where to send patients. A doctor in Victoria sending a patient to Britain, would like to know something of the differences of climate between the north of Scotland and the south of England, and between those places and Ireland, so Dr. Workman thought there must be great varieties of climate in Victoria. He would like, also, to have heard Victoria compared with the adjacent countries as to climate and its effect upon consumptive patients.

Diseased Os Calcis.

MR. FAGAN showed (for Dr. J. Moore) a diseased foot, removed for affection of the os calcis, which he believed was of a malignant nature. It had been gouged out some six months before, and returned with a sprouting, quickly-growing, vascular, myeloid tumour, springing from the os calcis.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday, January 31, 1880.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	773	1014	19	43	45	6	42	17	13	41·9
Belfast, -	182,082	511	403	1	9	3	2	21	14	14	28·8
Cork, -	91,965	231	249	—	15	38	—	1	5	4	35·2
Limerick, -	44,209	115	103	—	—	—	—	—	—	4	30·3
Derry,	30,884	89	84	—	—	1	—	1	2	3	35·4
Waterford, -	30,626	74	56	—	—	—	—	4	4	1	23·8
Galway, -	19,692	46	46	—	—	—	—	—	—	1	30·4
Sligo, -	17,285	25	25	—	—	—	—	—	—	1	18·8

Remarks.

The mortality during the four weeks in twenty large English towns, inclusive of London (in which the rate was 27·0), having an aggregate population of 7,499,468, was equal to an average annual death-rate of 26·0 per 1,000 persons living; in Glasgow the rate was 24·9, and in Edinburgh it was only 21·8. The average annual death-rate per 1,000 represented by the deaths registered during the four weeks in sixteen principal town districts of Ireland, having an aggregate population of 862,144, was 34·7; in the Dublin district, omitting the deaths of persons admitted into public institutions from outside the district, it was 40·9, and within the municipal boundary of Dublin it was 44·6. In reference to the foregoing, it is necessary to state that the mean temperature of the four weeks was 31·7° in London, 36·0° in Edinburgh, and 38·3° in Dublin. In this last named city 218 deaths were returned as having been caused by zymotic affections; the average number in the same period of the previous ten years was 156·7. Scarlatina, measles, and whooping-cough were all very prevalent and fatal. Of the 17 deaths ascribed to fever, only 2 were caused by typhus, while 14 were caused

by typhoid or enteric; 1 was returned as due to "simple continued fever"—i.e., continued fever of undetermined type. Whooping-cough was very fatal in Belfast, and scarlatina and measles were epidemic and fatal in Cork. A death from smallpox was registered in Belfast (No. 1 district) in the week ending January 24. It was that of a child aged three months, one of a family that left Ballymena on January 16. At the close of the period there were under treatment in the principal Dublin hospitals—of smallpox 60 cases, of measles 10, of scarlatina 42, of typhus 36, of typhoid 31, and of pneumonia 18 cases. In Dublin diseases of the respiratory organs were very fatal in the last two weeks of the period—the deaths numbered 269, compared with a ten years' average of 215·7. They included 206 from bronchitis (average = 167·7) and 40 from pneumonia (average = 25·2).

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of January, 1880.

Mean Height of Barometer,	-	-	-	30·307 inches.
Maximal Height of Barometer (on 21st at 9 a.m.),	-	-	-	30·676 „
Minimal Height of Barometer (on 1st at 9 p.m.),	-	-	-	29·599 „
Mean Dry-bulb Temperature,	-	-	-	39·1°
Mean Wet-bulb Temperature,	-	-	-	37·2°
Mean Dew-point Temperature,	-	-	-	34·5°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·207 inch.
Mean Humidity,	-	-	-	83·8 per cent.
Highest Temperature in Shade (on 1st),	-	-	-	56·6°
Lowest Temperature in Shade (on 22nd),	-	-	-	20·1°
Lowest Temperature on Grass (Radiation) (on 22nd),	-	-	-	17·6°
Mean Amount of Cloud,	-	-	-	61·2 per cent.
Rainfall (on 8 days),	-	-	-	·563 inch.
General Directions of Wind,	-	-	-	S.E. & S.S.W.

Remarks.

The leading characteristics of the weather experienced during the earlier part of the winter continued throughout January. Thus, atmospherical pressure was unusually high, the force of the wind was seldom great, the rainfall and rainy days were much under the average, and cold foggy weather often prevailed. It is true that in Ireland especially the month opened and closed with very high temperatures for the time of year; nevertheless, the twenty days ending the 27th were persistently cold, and in Dublin the sheltered thermometer fell to 20·1° on the morning of the 22nd. The mean temperature of the 1st was 54·2°—that is, about 14° above the average. A deep depression was travelling to N.E. along the Scotch and Norwegian coasts, and strong

S.W. to W. winds prevailed throughout the British Islands. In the rear of this depression an area of high pressure became established over France on the morning of the 3rd, and by the 7th had extended over England, and to some measure over Ireland also. Temperature consequently became much lower, and the weather was bleak and dull for some days. No severe frost was, however, reported owing to the overcast state of the sky. In the period between the 13th and the 17th some minor barometrical depressions crossed the British Isles, causing unsettled weather and showers of rain, sleet, or snow. On the 19th another anticyclone appeared and ushered in a severe frost, which was most intense in eastern France and the S.E. of England. From the 21st to the 23rd the centre of the anticyclone lay over Ireland, where keen frost prevailed. On the 24th gradients for S.W. winds began to be formed in the W., and gradually extended eastwards, causing a break-up of the frost and spring-like balmy weather in Ireland, Scotland, and the West of England. In the neighbourhood of London, however, dense fogs prevailed with frost to the end of the month. Some idea of the striking difference of climate during this period between central England and the South of Ireland may be gathered from the fact that at 8 a.m. of the 29th the thermometer read 14° at Nottingham and 50° at Valencia—a difference of no less than 36° . In Dublin the atmosphere was more or less foggy on the 6th, 7th, 9th, 20th, 23rd, and 26th. A slight fall of snow occurred at 3 a.m. of the 18th. Bright lunar rainbows were seen between 9 p.m. and midnight of the 1st.

CHLORAL HYDRATE IN ACUTE GASTRO-ENTERITIS OF CHILDREN.

PROF. ADOLPHE KJELLBERG finds that there is no medicine which is of so much use as chloral in checking the vomiting in acute gastro-enteritis of children. Being rapidly absorbed it stops the vomiting, calms the patient, and often checks the diarrhoea. It is best given by enema, so as not to risk its rejection by the irritable stomach. It should be given soon after the bowels have been moved. The dose for a child of from five to six months is 25 to 30 centigrams ($3\frac{1}{2}$ to 4 grains), while to a child of from twelve to fifteen months 50 to 60 centigrams (7 to $8\frac{1}{2}$ grains) may be given. The bulk of the injection should not exceed a dessertspoonful. The enemata may be repeated two or three times daily, and the dose may be increased if it is found necessary. In order to increase the effect of the chloral the author generally adds to each enema a drop of tinct. opii, and, if stimulants be indicated, 5 to 15 drops of liq. Hoffman. At the same time other remedies are not neglected—iced water, or cognac or champagne for the vomiting, opium for the diarrhoea, hot mustard baths for albuminuria should it occur, stimulants for collapse, &c., &c.—*Nordiskt medicinskt Arkiv*, XI., 3. J. M. P.

THE BOSTON
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MEDICAL
OBSERVATION

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ACUTE OSTEOMYELITIS, WITH SPECIAL REFERENCE TO ITS CAUSES.

THE following are the most important points of a very instructive paper by Kocher, on acute inflammation of bones:—Acute osteomyelitis is produced, like other inflammations, by infection, but still it is not a *specific* infectious disease. His observations were made on 52 cases, of which, however, only 30 were positively demonstrated to be cases of osteomyelitis acuta. Of these 30 cases, 26 were males, and 4 females; all were between 8 and 25 years of age. In a few of the cases the patients had caught cold or had received an injury; in seven cases the osteomyelitis was *secondary*, having developed in one in the course of a typhus, and in the others during the existence of inflammatory processes in different parts of the body. From these last cases Kocher deduced the conclusion that osteomyelitis is excited by the action of agents which may exist for some time in the body without giving rise to the general symptoms of infection of the bones. The bones which grow the most rapidly are the most frequently affected; hence, certain spots, such as the lower end of the femur and the upper end of the tibia, present a special *anatomical predisposition*. In the experiments on animals several methods were employed: 1. Agents which exerted a physical or a chemical action (liquor ammoniæ, tinct. cantharidis, ol. crotonis) were tried with antiseptic precautions. 2. Decomposing fluids and pathological secretions were injected. 3. The first method was combined with the internal administration of putrid matters. The first method, as a rule, failed, while the third succeeded. True metastases in other organs were not observed. Hence it follows that under some circumstances irritant matters may pass from the intestinal canal into the bony marrow, and give rise to osteomyelitis. In acute osteomyelitis, disturbances of function of the adjacent joints often precede the other symptoms; purulent effusions into the joints may also occur early. If the abscess be opened, the epiphysis will often be found separated. The pus frequently contains free fat. It is a remarkable fact that the lymph-glands are only slightly implicated. The fever is usually high from the beginning, without morning remissions, and sometimes remains high for some days after the abscess has been opened. Recovery, when it occurs, is greatly protracted by the necrosis, which almost always occurs. Death occurs either from pyæmia multiplex acuta,

with metastases in the lungs, kidneys and heart, or from the development of *secondary* inflammations in some internal organs (pyelo-nephritis, pleurisy, &c.), after the original bone disease has begun to improve. There is also danger of septicæmia after the abscesses have opened. Kocher divides the affection into three stages from a pathologico-anatomical standpoint:—1. The stage of purulent infiltration of the medulla, with the formation of isolated foci of disease; from these the pus extends to the periosteum and synovial membrane. 2. The stage of formation of abscesses and sequestra in the cortical and spongy tissues, and in the epiphyses. 3. The stage of reparation. The osteomyelitis becomes chronic in the form of chronic osteitis, or of abscess of bone; the former terminates in osteosclerosis or in osteoporosis. In the way of treatment, Kocher recommends the salicylate of soda in doses of 3 iss. to 3 vj. pro die, or if that will not be borne, alcohol in large quantities. Locally, he advises the evacuation of the pus by puncture (not by incision, so as to avoid the danger of a new point of infection), and the injection of a five per cent. solution of carbolic acid, one or more hypodermic syringefuls daily. The fluid should be injected not alone into the abscess, but also by means of hollow drills into the medulla. If the abscess have already broken, free incisions should be made down to the periosteum, and strict antiseptic dressing employed. If the joint be involved it can sometimes be saved by washing it out with a five per cent. solution of carbolic acid, but amputation will often be necessary.—*Centralblatt für Chirurgie*, No. 39, 1879, and *N. Y. Med. Record*, Jan. 10, 1880.

ON THE PHYSIOLOGICAL IMPORT OF THE CÆCUM IN THE HORSE.

DR. ELLENBERGER contributes a long paper on this subject, in which he arrives at the conclusion that the cæcum in the horse is of great importance in the process of digestion, and is to be considered as of similar import with the three first stomachs (die Vormägen) of ruminants. This is proved by the following facts:—1. In all animals who live on vegetable food which is of difficult digestion there are special arrangements provided by which special digestive processes take place which render possible the utilisation of the food. 2. The horse belongs to the animals who live on food rich in cellulose and difficult of digestion. 3. In the anterior and middle portions of the digestive tube there are no special arrangements, and here no special processes take place—on the contrary, the food traverses the stomach and small intestines rapidly. 4. The peculiarity of the horse's intestine is to be found in the large intestine, specially in the enormous cæcum. 5. This section of the intestine offers all the conditions for the attainment of the required purpose; since (a) having twice or thrice the capacity of the stomach, it can contain an enormous quantity of chyme; (b) its shape and position are such as to ensure the

most thorough mixture of its contents, so that processes of chemical decomposition and of maceration must be here effected; (c) it is provided with a secreting surface, and receives a considerable quantity of digestive fluids from the small intestine—its contents, consequently, are always rich in fluid, and have at least a thin pulpy (*dünnbreiige*) consistence. 6. The contents of the cæcum have always an alkaline reaction, and contain large numbers of infusoria. 7. In the cæcum a considerable development of gas always takes place. 8. The anatomical structure of the cæcum is such that no considerable absorptive activity can be attributed to it—on the contrary, the structure of the mucosa and the arrangement of the blood-vessels point more to a secretory function. 9. The cæcum contains more undigested matter than the colon and less than the ileum.—*Archiv für wissenschaftliche und praktische Thierheilkunde*, V. 399.

J. M. P.

CHOLELITHIASIS AS A CAUSE OF CIRRHOSIS HEPATIS.

CASES of cirrhosis due to cholelithiasis have been recorded by several observers, but they are still so rare that the following case from the practice of Dr. Roller, of Trier, possesses considerable interest:—A woman, sixty-nine years of age, who had never been addicted to drink, died after suffering for some months from the usual symptoms of cirrhosis of the liver. The autopsy showed general peritonitis of old standing, with signs of a recent inflammatory exacerbation; a perfect anatomical picture of interstitial hepatitis; a gall-bladder presenting the residue of old inflammation, and containing a large gall-stone. As in this case alcoholism could be absolutely excluded, the gall-stone was regarded as the primary cause of the hepatic disease. The various steps of the morbid process were thought to be as follows:—First, the gall-stone excited an inflammation of the gall-bladder, which resulted in thickening of its walls. From this starting-point the inflammation extended in all directions, but particularly to the transverse colon, as was evidenced by the thickness of the adhesions which bound the right flexure to the gall-bladder. The inflammation crept into the liver along the pathways furnished by Glisson's capsule; here it led to the development of new connecting tissue and the resulting cirrhosis.—*Berliner klin. Wochen.*, No. 42, 1879, and *N. Y. Med. Record*, Jan. 17.

NIGHT-SWEATS OF PHTHISIS.

IN a communication to the *Berliner klin. Woch.*, January 5, Dr. Köhn-horn states that in two cases in which he had tried all other remedies in vain, he met with the most surprising success in treating the profuse night-sweating of phthisis by means of the powder which is employed by

the Military Medical Department of the War Minister for the treatment of sweating of the feet. This is composed of salicylic acid three, starch ten, and talc eighty-seven parts. The entire body is to be powdered with this in the evening, the patient protecting the mouth and nose by means of a handkerchief, lest the irritation from the salicylic acid might induce coughing. If the skin is very dry, the powder may be made to adhere to it by first rubbing it with fat bacon or spirits and tannin. [We are informed by Dr. Berkart, of the Victoria-park Hospital, that he has long since found that the most efficacious and prompt means of treating night-sweats consists in, after drying the surface, painting the whole trunk with a very strong aqueous solution of gum acacia. This dries in a few minutes, and next morning the surface is washed with tepid water. A considerable reduction of temperature is produced.]—*Med. Times and Gazette*, Feb. 7.

AMYLOID DEGENERATION OF THE VISCERA DEVELOPED IN THE COURSE
OF TWO MONTHS.

PROF. ODENIUS records the following case of rapid development of amyloid disease :—A young man, aged twenty-one, and previously healthy, met with an injury of the knee which caused considerable hæmorrhage, and either immediately or shortly afterwards led to opening of the joint. After being treated badly for some time at his own home he was admitted into the hospital at Lund. He was then much emaciated. There was a large wound on the inner side of the right knee, communicating with the joint, and a large abscess in the popliteal space. This was opened, and discharged a considerable quantity of unhealthy pus. The patient soon died, just two months after the receipt of the injury. At the autopsy there was found destruction of the cartilages, caries of the bones, and extensive suppuration along the femur and tibia; in the kidneys, amyloid degeneration of several glomeruli, with their afferent vessels; traces of the same degeneration in the small arteries in the spleen and the parts about these vessels. As the other organs presented no alteration which could have led to this degeneration, it must be supposed that it may develop itself within the short space of two months.—*Nordiskt medicinskt Arkiv*, XI., 3.

J. M. P.

In Memoriam.

SIR DOMINIC JOHN CORRIGAN,

BART., M.D., &c.

Obiit Feb: 1, 1880, anno ætatis 78.

THE readers of THE DUBLIN JOURNAL OF MEDICAL SCIENCE will naturally expect that this number shall contain a brief notice of the life and labours of one who for many years was a frequent contributor to its pages, and all whose communications were remarkable for their practical nature and for the clear and perspicuous style in which they were written.

Sir Dominic Corrigan's communications to this Journal extended over a long period of years, from 1832 to 1875, and yet his earliest and that which he always considered his most important Essay, on "Permanent Patency of the Aortic Valves," was published before any of these in *The Edinburgh Medical and Surgical Journal* in the year 1832.

In 1836 the Pathological Society was founded, and a week seldom passed without some valuable communication being made by him, as its records published in this Journal testify. He always taught that the study of pathology and morbid anatomy was absolutely essential as the proper basis for prognosis and treatment of disease. He generally made his dissections with his own hands, and his demonstrations were most lucid—always explicit, and while using the plainest language he never was dull or wearisome.

Corrigan's reading was not diversified. His favourite book was "Morgagni," and the writer has before him his favourite copy, which bears testimony to the attention and thought with which its various chapters were studied. A favourite maxim to his pupils was—"Choose your one text-book of practice of medicine, and let your own clinical

records be the commentary to prove its accuracy or otherwise." But he was well acquainted with all the classical works of medical literature of his day, and knew Greek, Latin, and French perfectly.

Corrigan has the merit of owing all his success in life to his own exertions. Born of humble parents in the year 1802, he was educated at the Lay College of Maynooth, and was always a most attentive student—so much so that he was engaged by the then Professor of Natural Philosophy to make the ordinary experiments to elucidate his lectures, and it was from the practical knowledge of hydrostatics and pneumatics thus early acquired that he afterwards found such facility in demonstrating the diseases of the blood-vessels as illustrated by changes in the circulation. He was then apprenticed to Dr. O'Kelly, for many years the medical attendant of Maynooth College, but at his master's most urgent solicitation he was sent to the Edinburgh University, where he wisely used the great advantages which even then were held out to students in that metropolis, and graduated with credit in the year 1825. He returned to Dublin to put in practice the lessons of self-reliance which he had already learned, and purchased the appointment of Physician to Jervis-street Hospital, where, with very few beds but with well-selected cases, he laid the foundation of that experience which made him the admirable clinical teacher and successful practitioner he afterwards became. In the year 1832 he resided on Ormond-quay, and was extensively employed in the treatment of cholera, which then for the first time appeared in Dublin in a most virulent form. In 1835, when the British Association first visited Dublin, he was recognised as a physician of high repute, and the communications which he made, and his active services on various committees, left no doubt but that time only was required to ensure a highly remunerative reputation.

In the year 1840 Dr. Crampton died, and Corrigan succeeded him as Physician to the Whitworth and Hardwicke Hospitals. Here for the first time he had opened to him a large field for clinical instruction, and well he used it. Eight o'clock each morning found him in the wards with a most attentive class of students, recording or commenting upon recorded cases, and this practice he followed for some years with unabated zeal until other engagements rendered its continuance impossible, and he

handed over the labour to other hands. It would be difficult to say which were most prized—his clinical lectures or his didactic lectures on the practice of medicine. The latter were always illustrated by casts or drawings from clinical cases, and the benches in the Peter-street School of Medicine, where he first lectured, and afterwards in the Carmichael School, were always crowded with students, and often the theatre was insufficient to accommodate the number of applicants.

The Hardwicke Hospital supplied the cases which were the groundwork of his admirable lectures on fevers, and the time spent in the thorough investigation of these cases was sufficient warrant for the accuracy of detail.

Corrigan was physician to the Hardwicke Hospital when the disastrous potato famine visited Ireland in the year 1846. With Sir Philip Crampton and Sir Robert Kane he acted on what was then termed the Central Board of Health for Ireland. An influential protest was published against the remuneration offered by this Board to the medical profession throughout Ireland for their services in this dreadful year. Unfortunately Corrigan chose this exact time to apply for the Fellowship of the King and Queen's College of Physicians, and the same individuals who got up the protest were successful also in having Corrigan rejected at the ballot. We dwell on this point because to his last hour Corrigan assigned his rejection to other causes, by which the College was then and is now incapable of being influenced. However, besides the reward which a well-regulated mind always enjoys from the consciousness of having faithfully and efficiently performed a great public service, he had the satisfaction of learning that his work was highly appreciated by his Sovereign and the Irish Government, which alone knew the difficulties he had to contend with. He was made Physician-in-Ordinary to the Queen in Ireland and a Baronet of the Empire. The country at large owed much to the unceasing energy and immense capacity for work which Corrigan then displayed. After a hard day's work of hospital and private practice, it was no unusual thing for him to devote six or eight hours to tedious office work, receiving and answering communications from all parts of Ireland.

From its foundation to his death, Sir Dominic Corrigan served on the

Senate of the Queen's University, for many years as a member of the Senate, and on the death of the Right Hon. Sir Maziere Brady, Bart., in 1871, he was elected Vice-Chancellor. Here also he exercised considerable influence, always endeavouring that this institution should fully carry out the wise purposes for which it was instituted and endowed. He was ever an advocate for mixed education, and it is probable that if he had yielded on that point he would have been returned a second time as member for his native city. It would, in our opinion, have added many years of usefulness to his life, and probably added to his fame, had he never attempted Parliamentary life. In his efforts to become a member of the House of Commons he was no doubt actuated by high and unselfish ideas of the use which he would make of such a position when it was once obtained; and doubtless the welfare of his own profession, and an idea that he could be useful in redressing some of its grievances, entered largely into his ambition; but the means to which he—we must suppose of necessity—resorted were not such as to recommend themselves to his best friends, and certainly did not redound to his fame.

In his popular orations of that time, which we have now before us, he indulged in violent declamation and almost revolutionary language, which we are satisfied were foreign to his nature, and would not be used on any other occasion; so that his best friends were more than satisfied when it was determined that he was not to seek for re-election, more particularly when it must be acknowledged that even with well-directed efforts to gain success his Parliamentary career was not a successful one.

We have no space to allude to the various public Boards which availed themselves of his assistance without fee or reward.

He was a man of great physical energy; his feats of activity and strength in his youthful days were most surprising; his powerful frame is well preserved in the grand statue of him by Foley which was presented by numerous friends and admirers to the College of Physicians—no doubt the most appropriate place for it to rest. The building itself is more or less a memento of his conception and achievement. Like Columbus's egg, the simplicity of the *dénouement* (which was due to him entirely), once the key-note was struck, was the greatest marvel of the entire project, and he watched over the details with incessant care until

the completion of the edifice. The Fellows of the College have had his portrait placed in their reception hall; it is painted by the late Catterson Smith in the robe of President of the College, which high and honourable position he held for five successive years from 1859 to 1864.

All through life Corrigan devoted much time and attention to the pursuit of natural history. He was one of the original founders of the Royal Zoological Society of Ireland, served on its Council for many years as an active member, and it was owing to his energy and that of a few more that the Society did not become extinct in the famine year of 1847. He was for some years President of the Society, and in many ways showed what warm interest he took in its welfare. He was no mere amateur naturalist; the lectures which from time to time he gave on different subjects of natural history showed a very considerable knowledge of its various branches, and when we consider the very important faculties which this pursuit exercises, it would seem to be peculiarly the one which Corrigan would select to engage his attention in his less occupied hours. "For a good practical naturalist must be a good observer, and how many qualities are required to make a good observer? Attention, patience, quickness to seize separate facts, discrimination to keep them unconfused, readiness to combine them, and rapidity and yet slowness of induction—above all, perfect fidelity."^a And this combination Sir Dominic Corrigan certainly had, and they made him a good practical naturalist; but the same combination made him a most profound physician, an admirable teacher, a sagacious counsellor, and a true friend.

^a Wilberforce's Essays. Vol. I., p. 2.

THE DOCTORS'
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PART I. ORIGINAL COMMUNICATIONS.

ART. XII.—*Iodic Purpura*.^{*} By GEORGE F. DUFFEY, M.D.,
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on *Materia Medica* in the Carmichael College of Medicine and
Surgery, &c.

IN September, 1877, Dr. Alfred Fournier published in the first volume of the *Revue Mensuelle de Médecine et de Chirurgie* a paper on Iodic Purpura, or Petechial Iodism, in which he describes in elaborate detail a variety of purpura following the internal administration of the iodide of potassium. In an abstract of this paper in the "Periscope" of the *Dublin Journal of Medical Science* of April, 1878, I referred to cases of iodic purpura, described by former observers, that had been noted by Dr. W. G. Smith in three of his "Reports on *Materia Medica* and Therapeutics" in this Journal. No allusion to these or to any similar cases is made by M. Fournier; although it would seem that Ricord, M. Fournier's distinguished master, was one of the first to observe the production of purpura by the use of the potassic iodide.

Having recently had under my care in Mercer's Hospital a case in which purpura was similarly produced, I am led to bring it forward as an additional instance of this peculiar form of a medicinal eruption:—

CASE.—A wine-porter, aged twenty-five, was admitted into hospital on the 6th October, 1879, with rheumatic pains in his feet. The ankles

^{*} Read before the Medical Society of the College of Physicians, March 3, 1880.
[For the discussion on this Paper see p. 323.]

and knees were slightly swollen, and he had a mitral regurgitant murmur. He stated that exactly a year previously he had had rheumatic fever, for which he was under treatment for two months in another Dublin hospital. Since then he had been more or less subject to rheumatic pains in his joints, and to cardiac palpitation, which incapacitated him from working. Notwithstanding the temptation offered by the nature of his employment, he affirmed that he had always been a moderately temperate man, and he denied ever having had syphilis.

On the day of his admission (October 6th) he was ordered ten grains of iodide of potassium three times a day (3 ss. per diem) in water; and on October 29th, the dose of the iodide was increased to fifteen grains (gr. 45 per diem), with which, in consequence of his anæmic condition, was combined tartrate of iron.

On the evening of the 6th November, exactly one month after his admission—the patient having taken the iodide continuously, and with apparent benefit all the time, to the total amount, presumably, of about $2\frac{1}{4}$ ounces—he complained to my clinical clerk, Mr. H. G. Myles, of a slight sensation of warmth and itchiness in both shins.

Mr. Myles, on examining the legs, noticed an eruption on them of small round spots, which the patient had not himself observed before, or on any previous occasion, and which he was confident were not there that morning.

The next day his state was as follows:—He had had a good night, and felt well; his appetite was good; there was no fever; and now no heat or itchiness in the shins. There was slight swelling and a little redness on the dorsum of the foot, similar to what he had on former occasions, and which was ascribed to rheumatism.

Over the lower four-fifths of the anterior and lateral aspects of both legs, and on the dorsum of both feet, was a copious eruption of small, discrete purpuric spots. They were circular, of a dark blood-red colour, varying in size from that of the head of a pin to that of a lentil; did not disappear upon pressure, and were not elevated above the surface. They were confined to the legs, chiefly the anterior tibial regions, and the insteps; and, with the exception of a few acne-like spots on the forehead and under the left clavicle—probably, also, due to the iodide—there was no other cutaneous affection or discoloration of the skin. The gums were not spongy, and there was otherwise no hæmorrhagic tendency. No constitutional disturbance of any kind existed. There was no coryza, no feeling of languor, depression, or weakness, and no albumen in the urine.

The iodide was at once discontinued, and the eruption grew gradually fainter in colour and finally disappeared; and in eleven days not the slightest trace of it could be distinguished. A week after this—viz., on November 19th, no medicine having been given him in the interval—

he was again ordered, as a test experiment, fifteen grains of iodide of potassium in infusion of quassia three times a day. The following morning, after having taken three doses of the medicine—*i.e.*, forty-five grains—the purpuric rash had reappeared on both legs, but not preceded by any sensation of heat or itchiness. On this occasion some fifty or sixty spots were counted on each leg—a smaller number than existed on the first appearance of the eruption. It also seemed more confluent than, and not so bright in hue as, before, but was equally as distinct in its general characters. The medicine being discontinued, the rash again faded, and in four days had quite disappeared.

As his general health continued very good, and as he was freer from arthritic pains than he had been for some months, I was desirous, in the first place, of testing his susceptibility to some other preparations of potassium, before trying the effects of the other alkaline iodides. He was accordingly ordered, on November 24th, fifteen grains of chlorate of potash three times daily. Two days subsequently, however, he complained so much of a return of the pains in his right hand and wrist, that I substituted the iodide of sodium in ten-grain doses three times a day for the potassic chlorate. The pains, however, shifted from the right to the left side, involving the shoulder and knuckles, and subsequently the knee; and, as he complained that the medicine, of which he had now taken altogether two drachms, gave him no relief, it was stopped for one day, and five grains of Dover's powder given every third hour. This having procured relief, the iodide of sodium was resumed; and, as he had now lost his former good appetite, he was allowed a glass of marsala daily.

On December 4th he had taken another two drachms of the sodium salt, making half an ounce altogether, without its producing any eruption. At this time he was in good health again, his appetite was improved, and he had no pains. The iodide of ammonium was now (December 4) ordered in ten-grain doses in water three times daily. The same evening, after two doses (twenty grains) of the medicine, as he was sitting before the fire, the eruption reappeared—chiefly on his right leg, and more towards its posterior aspect than on former occasions. His leg felt hot before the rash came out, probably only in consequence of his sitting close to the fire at the time, but there was no itchiness, or other constitutional or local symptom of any kind. The medicine was discontinued, and on the third day the eruption had quite disappeared again. He was shortly afterwards discharged from hospital in good health.

Although the special subject of this communication is that particular form of eruption produced by the administration of the iodide of potassium internally now known as iodic purpura, it may

not be uninteresting to mention briefly the different varieties of cutaneous affections that have been ascribed to the use of iodine and the alkaline iodides. I say iodine as well as the iodides, for in the light of recent researches, to which I shall refer presently, it may, I think, be assumed that when the iodides are administered, free iodine is liberated, and acts as such on the system.

Dr. H. E. Fischer, of Vienna,^a distinguishes four principal forms of exanthem produced by iodine—viz. (1), the erythematous; (2) the papular; (3) the nodulose-pustular; and (4) the eczematous form. There is no allusion in the extract of Dr. Fischer's paper, which alone I have been able to consult, to a purpuric form of eruption, further than by the observation, under the third form, that Ricord has seen iodine produce an infiltration of blood and serum in parts formed of loose and soft cellular tissue. I have not been able to verify this particular observation of Ricord's; but in his "*Études sur l'action pathogénique de l'iodure de potassium pour servir à régler l'administration de ce remède*,"^b this author, in describing its action upon the skin, says that there is hardly any form of acute cutaneous eruption which the iodide of potassium may not excite—in one person it is eczema, in another herpes, and in a third simply erythema. The most common variety is a psyracious form of eruption, much resembling the pustules of acne. He proceeds to state that he has seen two patients who, at two different intervals, presented an eruption of papular erythema in some places, and of erythema nodosum in other. In a patient suffering from cancer of the face to whom the iodide was given in very large doses, he has seen it cause an eruption of impetigo on the scalp, and of rupia on the legs and forearms—phenomena which subsided as soon as the remedy was suspended, only to reappear as soon as its use was begun again. Ricord has several times seen the iodide of potassium give rise to "a veritable purpura hæmorrhagica;" and refers to the case of a gentleman in whom, on three different occasions, after being given for a fortnight, it produced on his legs a true morbus maculosus of Warloff (Werlhof). In a lady also, whom he saw with M. Cruveilhier, very similar effects resulted from its use. Again, in a discussion in the *Académie de Médecine* on a report by Trousseau on a communication from M. Rilliet on Iodine,^c Ricord, in the recital of numerous unpleasant symptoms which he had seen

^a L'Union Méd., 31st Jan., 1860, p. 200, from Wien. med. Wochenschrift.

^b Bull. Gén. de Therap. Tome XXIII., p. 161. 1842.

^c Gaz. Méd. de Paris. 1860.

follow the administration of iodide of potassium, said that it might produce all forms of skin eruption, and that its effects were sometimes "brutal."

Bazin^a describes three forms of iodic eruptions—the erythematous, the papular, and the pustular, but makes no mention of a purpuric form. Dr. Petitjean, the most recent writer on the subject, in his Thesis (No. 343) for the Doctorat en Médecine, entitled "*Accidents des Côté de la Peau et des Muqueuses déterminés par l'administration de l'iodure de Potassium*," presented to the Faculté de Médecine de Paris last July, describes five forms of eruption—viz., the erythematous, the papular, the tubercular, and the eczematous forms; and, finally, iodic purpura.

Most of the standard works on *Materia Medica* and *Therapeutics*^b allude to the peculiar effects iodide of potassium occasionally produces on the skin. The so-called iodic acne is doubtless the most common of these manifestations; and as it has been mistaken for the eruption of both smallpox and of syphilis, its recognition is of importance.

In an article on "*Pemphigus Produced by the Administration of Iodide of Potassium*,"^c the late Dr. Bumstead, of New York, describes the case of a young man with an imperfect venereal history, who was admitted into hospital for ecthymatous ulcerations upon the leg. He was prescribed a mixture containing twenty grains of the iodide of potassium, to be taken twice daily. On the following day, after having only taken three doses, an eruption of very large bullæ appeared upon those portions of the integument which were exposed to the air. The patient reported that on three previous occasions during the last year he had taken the iodide, and always with the same unpleasant result. As stated by Bumstead, Fischer^d makes no allusion to a bullar eruption due to iodide of potassium. And, according to Bumstead, so far as he knew, it is only referred to by Boinet,^e who states that Cazenave has seen "eruptions of bullæ filled with sero-sanguinolent fluid which are readily torn, and which may be followed by ulcerations difficult to heal."

^a *Leçons Théoriques et Clin. sur les Affections Cutanées Artificielles*, p. 201. 1862.

^b *E.g.*, Pereira's *Elements*, edited by Bentley and Redwood, p. 150, 1872. Ringer's *Handbook*, 6th Ed., p. 111. Smith's *Commentary*, p. 573. Stillé and Maisch, *The National Dispensatory*, p. 1131, 1879. *Cf.* also Tilbury Fox, *Skin Diseases*, 3rd Ed., p. 133. Wagner's *Manual of General Pathology*, p. 215.

^c *Amer. Jour. Med. Sci.*, p. 99. July, 1871.

^d *Loc. cit.*

^e *Iodothérapie*, 2nd Ed., p. 68. 1865.

In 1877 the late Dr. Tilbury Fox described^a a severe "quasi-bullous" form of eruption induced by iodide of potassium. He related particulars of two cases of this pemphigoid rash, and gave it as his opinion that it did not appear save as the rarest phenomenon. Bumstead's case, the case of so-called hydroa figured in the New Sydenham Society's Atlas (Plate XXXIII.), and described in the Catalogue (Part II., p. 111), as well as the other cases reported by Mr. Hutchinson, and by Dr. Taylor of New York, also referred to in Dr. Fox's paper, seem to be instances of this same rare form of eruption, which Dr. Fox contended is of glandular origin.

A description of a similar bullous rash in a patient of Mr. Howard Marsh's, is given by Dr. Thin in the last volume of the "Medico-Chirurgical Transactions."^b And in the last volume also of the "Clinical Society's Transactions,"^c Dr. Dyce Duckworth reports two cases of iodide of potassium rash, in both of which the eruption was of a vesicular, varioloid aspect, mixed with some hard and "shotty" papules. On puncture a little opalescent fluid exuded, which yielded equivocal evidence of the presence of iodine.

Prof. Louis A. Duhring also reports^d a case of bullous eruption, confined for the most part to the hands and forearms, which he attributed to iodide of potassium. And, more recently still, at the annual meeting of the British Medical Association, at Cork, Dr. Finny^e described a case in which iodide of potassium had caused a vesiculo-pustular eruption with an erythematous blush, which he termed hydroa (?), on the trunk.

Examples of the simple congestive, and of an erysipelatous variety of the erythematous form of eruption, as well as of that rare form, iodic eczema, are given in M. Petitjean's Thesis; and in the article on Iodine in the "Dictionnaire de Médecine et de Chirurgie"^f it is stated that erythema, urticaria, and acne, complicated with subcutaneous œdema, have also been noticed as following its internal administration.

The case of iodic purpura, under the care of Dr. Bradbury of Cambridge, noted in *The British Medical Journal*,^g appears to have been the first of its kind published in this country.

^a Clin. Soc. Trans. Vol. XI., p. 40. Illustrated.

^b Vol. LXII., p. 189. 1879.

^c Vol. XII., p. 39. 1879.

^d Philadelphia Med. and Surg. Rep. Vol. XXXVII., p. 89. 1877.

^e Brit. Med. Jour., Vol. II., 1879, p. 291.

^f Vol. XIX., p. 359.

^g Vol. I., 1871, p. 120.

Virchow* states that "Ricord observed purpura in a syphilitic subject whenever he administered iodide of potassium," and that he (Virchow) himself had seen a case of cancer in which, after full doses of iodide of potassium, severe hæmorrhage from the gums and genitals appeared. Dr. Stephen Mackenzie,^b in addition to a case he records of purpura almost immediately following the administration of a single dose of $2\frac{1}{2}$ grains of iodide of potassium to an emaciated and puny syphilitic infant of five months old, and proving fatal, refers to other cases of iodic purpura he and his colleagues, Dr. Barlow and Mr. Warren Tay, have also seen, and likewise quotes a description of the eruption from Van Buren and Keyes.^c

Including the three cases he gives in detail, M. Fournier^d has met with fifteen examples of iodic purpura. According to this accurate observer the eruption always follows, after a very short interval, the administration of the drug, and is often only accidentally observed; hence it is probable that it occurs much more frequently than is thought, and may thus be many times overlooked. In the first case Fournier gives, the patient noticed the spots when in a bath. The eruption in this case appeared on three different occasions at intervals following the renewed use of the iodide, of four months and of one year respectively. In another of his patients, four successive administrations of the iodide caused four times a purpuric eruption. Fournier's third case is that of a patient who three times, at intervals of several months, was attacked with this purpuric eruption. This case, the subject of which was a medical student, is further remarkable from the fact that, notwithstanding the nature of the eruption was recognised, the iodide of potassium was continued, and yet, nevertheless, the eruption gradually disappeared. If, now, the daily dose of the iodide was increased—doubled, for example—there was a marked recrudescence of the eruption, or rather a new crop of the purpura each time the dose was augmented. On these occasions the eruption was much less abundant than on its first appearance. It was noted also that in the case under my care the eruption on its second and third manifestation was not so numerous as on its first. With one exception, in which the eruption was on the trunk,

* Handbuch der spec. Pathol. und Therap., Band I., s. 242. Quoted by Mackenzie, *Med. Times and Gaz.*, Vol. I., 1879, p. 279.

^b Loc. cit., p. 173.

^c A Practical Treatise on the Surgical Diseases of the Genito-Urinary Organs, p. 566.

^d Loc. cit.

Fournier has always seen iodic purpura on the legs; he has never seen it on the feet. The peculiar limitation of the eruption to the lower three-fifths of the anterior tibial regions gives a particular physiognomy to the affection, which has also been noticed by other observers; but one of Dr. Petitjean's cases and the one I record show that the purpura may invade the dorsum of the foot.

The case of pemphigoid eruption described by Bumstead presented, in addition, an eruption of purpura upon the feet and legs. Although Dr. Bumstead states that he suspected the purpura was also due to the iodide, such is doubtful, as the patient was confident that it had existed there for a long time.

In all M. Fournier's cases, the subjects of the eruption, without exception, enjoyed flourishing or average health. They presented no other hæmorrhagic tendency. Sex, age, temperament, profession, external temperature, appeared to be without influence on its production. The same has been noticed, in the majority of cases, by other observers, and all seem to think that "individual predisposition" is alone capable of accounting for its occurrence. Ricord^a also says that there are certain idiosyncrasies which render the employment of the iodide impossible, whatever may be the dose employed; and Mr. Hutchinson remarks^b that the production of iodide of potassium rashes appears to depend far more on the idiosyncrasy of the individual than on the dose administered.

In examining these remarkable effects of the iodide of potassium it is necessary to consider its physiological action. Binz,^c in explaining how so harmless a substance—as he calls it—as iodide of potassium may give rise to iodism, states that the salt, in presence of the oxygen of the blood and the carbonic acid of the tissues, is transformed into the bicarbonate of potassium with liberation of free iodine:—



Kaemmerer^d locates the place of this change in the blood, not in the tissues. In either case the action of potassium iodide in the organism, as before mentioned, undoubtedly may have the specific effect of iodine should such a change take place.

^a *Gaz. Méd. de Paris.* Loc. cit., p. 147.

^b *Catalogue of New Sydenham Society's Atlas.* Loc. cit.

^c *Arch. für Pathol. Anat. und Phys.*, T. LXII., p. 124; and *Rev. des Sci. Méd.*, Tome V., p. 485.

^d *Ziesssen's Cyclp.* Vol. XVII., p. 291.

Bogolopoff,^a as the result of his experiments on dogs and on frogs, says that in non-poisonous doses the action of iodide of potassium on the circulatory system consists in a rapid dilatation of the peripheral vessels; while M. Sée^b affirms that the circulation is manifestly modified by iodine, contraction of the arteries being a true symptom of poisoning by it.

In no less than twenty-seven recorded cases has the injection of solutions of iodine into ovarian cysts been followed by death.^c In one of these cases (Rose's) free iodine was found in the stomach and alimentary canal, a solution of one drachm of iodide of potassium and five ounces of tincture of iodine having been injected ten days previously into the cyst. On the fourth day, exanthematous blotches, not disappearing on pressure, appeared on the skin and in the mouth, the sputa became bloody, and menstruation appeared two and a half weeks too soon.^d Prof. Cunéo, of Toulon, has seen purpura hæmorrhagica produced by the application of tincture of iodine,^e and Tilbury Fox has known the local application of iodide of starch give rise to urticaria from the absorption of iodine.

Kuess^f is said to have frequently observed hæmorrhages from the lungs during the employment of the iodine treatment; while in a few isolated cases metrorrhagia, or habitual increase of the periodic menstrual flow, has been demonstrated.

Purpura has been ascribed to some change in the blood, to fatty degeneration of the capillaries, and to vasomotor paralysis.^g Mr. Hutchinson^h describes a variety, which he designates as purpura thrombotica, from thrombosis of the capillaries, being, as he believes, the principal condition present. Occurring as the purpura in my case did, in a rheumatic subject, it should be mentioned that the appearances and symptoms did not correspond with that form of purpura sometimes met with in cases of rheumatism, as described by Schönlein,ⁱ in 1839, under the name of peliosis, or purpura rheumatica. In this form of disease, which has been also termed roseola

^a Arbeit aus dem pharmak. Labor zu Moskau (de Sokolowski), p. 125, 1876; and Rev. des Sci. Méd., Tome X., 1877, p. 92.

^b London Med. Record. Vol. I., p. 777.

^c Ziemssen. Loc. cit., p. 288.

^d Wood. Treatise on Therapeutics, p. 335.

^e Dict. de Méd. et de Chir., Vol. XIX., p. 359.

^f Ziemssen. Loc. cit., p. 305.

^g Minich. London Med. Rec., 1875, p. 359.

^h New Sydenham Society's Atlas, Plate XXXIX., and Catalogue, Part II., p. 133.

ⁱ Pathologie und Therapie, zweiter Theil. S. 42.

rheumatica,^a local extravasations occur in the skin, and erythematous patches about the joints, which are swollen and painful. Dr. Richardson^b has defined three forms of purpuric disease, termed by him (a) aqueous purpura, (b) saline purpura, and (c) vascular purpura. Aqueous purpura is so called because in it the water of the blood is in excess, and the colloidal and the crystalloidal parts are relatively decreased; and although there is no evidence of the fibrin being reduced, it is distributed through too large a volume of water. In saline purpura the blood is surcharged with some saline soluble substance, by which the colloidal part is held in undue solution. Dr. Richardson has seen this form induced by the excessive use of chloral. In vascular purpura the blood is not modified at all, but owing to some defect in the vessels of the minute circulation, they allow the blood to escape if subjected to any blow, strain, or pressure.

Microscopic examination and chemical analysis of the blood in cases of purpura have thrown but little light on the cause of the disease. The varieties of purpura, especially the scorbutic, were formerly attributed to a diminution of the fibrin in the blood. But the analyses of purpuric blood by Frick, Garrod, and Parkes,^c prove incontestably that the fibrin may be in excess, and that there is not necessarily any deficiency in the coagulation of purpuric blood. According to Neligan,^d the proximate cause of purpura is manifestly atony in the capillary system of blood-vessels, combined with an abnormal fluidity of the blood from deficiency of its solid constituents. As bearing upon the condition of the tissues in purpura, Dr. Wilson Fox found, in a fatal case in a syphilitic subject, that in some portions of the skin, close to the affected spots, the capillaries and arteries broke down very easily; that some presented a peculiar glistening, waxy look, while others had a non-granular appearance.^e The vessels affected with this change, which he describes as waxy degeneration, became acted upon in a very marked manner with iodine. Dr. Mackenzie, therefore, in his valuable contribution to the literature both of syphilitic purpura and of iodic purpura previously referred to, asks may it not be that the action of iodine upon the diseased vessels observed by

^a A. T. Thomson. *Practical Treatise on Diseases of the Skin*, p. 338. Edited by Edmund A. Parkes. 1850. P. 338.

^b *Lancet*. Nov. 21, 1874.

^c A. T. Thomson. *Loc. cit.*, p. 341.

^d *Diseases of the Skin*, p. 355. Second Edition.

^e *Brit. and For. Med. Chir. Rev.*, 1865, p. 480.

Dr. Wilson Fox under the microscope, occurs also during life, and by thus altering the constitution of the diseased vessels, modifies their capacity for resisting the pressure of the blood contained within their channel, and allows either of transudation of coloured blood-corpuscles to take place *per diapedesis*, or even causes them to rupture, and thus give rise to extravasation?

It is natural to suppose that in purpura there must be rupture of the capillaries, as blood particles escape from them, but whether this depends on mere congestion, or on disease of the coats, or on other causes independent of the vessel, is not yet known definitely. However, as bearing on the theory of diapedesis advanced by Dr. Mackenzie, it is interesting to note that Prussak^a—even although his experiments have not been confirmed by Cohnheim—observed the diapedesis of the red blood corpuscles in frogs and rabbits, into the skin of which he had injected a solution of chloride of sodium—thus inducing an artificial scorbutus. Becquerel, according to Neumann,^b has shown that the blood in purpura is less coagulable than in the normal condition. As the blood in purpura is very rich in alkaline salts, Becquerel believes that the disease may be induced by the administration of large doses of alkalies. In the majority of the cases of iodide of potassium eruptions, however, that have been noted, the eruption appeared within a few days of taking the medicine, and in many cases after the use of but small doses of the iodide. In Dr. Mackenzie's fatal case a single dose of $2\frac{1}{2}$ grains alone was taken. It cannot, therefore, be maintained that any saturation of the system, either with iodine or the alkaline iodides, is necessary in order to produce these, in many cases, alarming results. M. Petitjean believes that in some persons there is even a temporary predisposition to the occurrence of iodic purpura, so that patients may for a long time take the iodide of potassium in large doses without having any purpuric manifestation. If the medicine is then ceased for some time, when it is again taken the purpura appears. It has been shown by Guttman, Ringer,^c and others, that potash salts are far more poisonous than soda salts, and that the symptoms of poisoning induced by these salts are due to the potash, and are producible by all potassium salts. Several cases of poisoning by the chlorate of potash have been also lately

^a Neumann. Text-book of Skin Diseases, p. 201. Translated by Pullar. 1871.

^b Loc. cit.

^c Handbook of Therapeutics. Sixth edition. Pp. 124, 165.

published.^a But from the analogy in many respects between the bromide and the iodide of potassium, and from the effects that iodine are known to produce, it would seem more probable that purpuric manifestations, at least, are due to the iodine rather than to the potassium. So far as I am aware no case of purpura following the administration of the bromide has been published. This point is specially referred to by M. Hallopeau, in the report of a case of cerebral hæmorrhage which he believed to have been caused by the administration of iodide of potassium. The patient had also iodic purpura.^b

In the microscopic examination of a portion of skin which was the seat of a bullous iodide eruption, Dr. Thin^c found evidence of disorganisation of the walls of the blood-vessels. The affection of the blood-vessels was localised in a circumscribed area of the skin, and attended by effusion of constituent parts of the blood. “The *rationale* of iodide eruptions, therefore, seems to be that there are conditions in which iodine, when present in the blood, attacks and disorganises the blood-vessels at certain localised points. As a result of this injury to the wall of the vessel, there is an escape of blood fluid into the surrounding tissue, and more or less plugging of the vascular tube by coagula.” Dr. Thin thinks that his demonstration of an affection of the blood-vessels as a cause of iodine-bullæ suggests an explanation of the other changes known to be produced in the skin by iodine. It may be considered that the papule of iodic acne, the iodic bulla, and the iodic purpura spot, represent different degrees of injury to the blood-vessels. “In the first we have a limited œdema with congestion of the vessels; in the second, an effusion of serum with more or less of the formed elements of the blood; in the third, destruction of the wall of the vessel and hæmorrhage.”

Dr. Duckworth and Dr. Harris's microscopical examination of portions of skin, including pustules—removed after death from a patient of Dr. Duckworth's who suffered from iodide of potassium rash^d—showed that the blood-vessels were very numerous in all the specimens. Immediately beneath the pustule they were dilated, but empty of blood. They were also ensheathed in streaks of exudation corpuscles; but no rupture of any blood-vessel could be

^a Lond. Med. Record, 1879, pp. 402, 424, and 445.

^b Gaz. des Hôpitaux, p. 45. 1879.

^c Med. Chir. Trans. Vol. LXII., p. 189. 1879.

^d Trans. Path. Soc. Lond. Vol. XXX., p. 476. 1879.

found, or any evident cause of the superficial localised dermatitis—to which the eruption was attributed—be demonstrated. The sweat-glands seemed entirely unaffected.

As having an important bearing on the causation of these different varieties of eruption, it should be noted that Dr. Dyce Duckworth, who has reported two cases of iodide of potassium rash,^a calls attention to the fact that defective action of the kidneys has probably much to do with the occurrence of such eruptions, since they have been observed as specially apt to follow the use of the drug in patients that are suffering, as his were, from nephritis, and who are much reduced in health. There would seem to be, he says, in such instances, less good eliminating power, and thus the drug is longer maintained in contact with the tissues of the body, and there is manifestly some special susceptibility to the influence of the soluble iodides. In the case reported by Dr. Thin there was also renal disease, and the same complication existed in a remarkable case under the care of Dr. Fenwick, in the London Hospital,^b in which, in addition to the development of a pustular and papular eruption, the most alarming symptoms of œdema glottidis set in after four 10-grain doses of iodide of potassium. Life was only saved by the prompt performance of tracheotomy. M. Petitjean^c records three other cases in which œdema of the glottis was also induced by the administration of iodide of potassium. In two of these also tracheotomy had to be promptly performed, with a fatal result in one patient, the subject of albuminuria. A female patient of Nélaton's, too, became affected with œdema of the glottis during the use of iodide of potassium,^d and a similar, but fatal, case of the same accident occurred in the practice of Dr. Lawrie.^e

It may also be observed that in five of the cases referred to in this paper as published in England, and in my own case, there was heart disease. All of these five cases, which were those presenting the bullous form of eruption, died shortly after its making its appearance.

The action of the other alkaline iodides in producing a petechial rash, has been also tested by Dr. Sydney Ringer.^f In a case in

^a Clin. Soc. Trans. Vol. XII., p. 39. 1879.

^b Lancet. Vol. II., 1875, p. 693.

^c Loc. cit., p. 27.

^d Abeille Méd., p. 317. Tome X.

^e Stillé's Therapeutics and Materia Medica, p. 763. Third edition, Vol. II.

^f Practitioner, p. 129. March, 1872.

which iodide of potassium was given in 10-grain doses, thrice daily, to a lad convalescent from acute rheumatism for a few lingering pains, it produced, on three different occasions, coryza and purpuric spots on the front of the legs and ankles. The iodide of ammonium rapidly caused the same results, but the iodide of sodium, as in my case, had no effect. Dr. Ringer's patient took between 2 and 2½ drachms of the sodium salt, and my patient half an ounce. It would seem, therefore, from these two experiments, that this preparation is less active than either the potassium or the ammonium salt. Gamberini, of Bologna,^a also states that he prefers the iodide of sodium to the potassium salt—one of his reasons being that it does not produce the eruptions which the latter determines. Possibly the relatively large proportion of potassium salts in the red blood corpuscles, and of sodium salts in the plasma,^b may have some as yet unrecognised bearing on the point. Barra-lier, the author of the article on Iodine, in the "*Dictionnaire de Médecine*," says that the iodide of ammonium has a more energetic and more rapid action than the two other iodides—a clinical fact which perhaps may be chemically explained by its containing a larger percentage of iodine (87 per cent.) than they do.

If it be granted that the effects of the alkaline iodides on the system—which, as we have seen, may occasionally be very alarming—are in great measure due to the action of free iodine liberated from them, the chemical purity of the salt for medicinal use is of much importance. Iodates are a frequent impurity of iodides; and the freedom with which the former, in the presence of the latter, give rise, by mutual reaction, to free iodine, is well known to chemists.^c

^a Dict. de Méd. Loc. cit.

^b Foster, Text-book of Physiology, p. 29. Third edition.

^c I am indebted to Dr. Walter G. Smith for the following further references to the literature of Iodic Purpura:—R. Abbe, *Archives of Dermatology*, 1878, IV., No. 2; *St. Petersburg. med. Woch.*, 31, 1878; Labat, *La France Méd.*, 1878, No. 72; Mora, *Courier Méd.*, 1878, XXVIII. (*Index Med.*, Jan. 1879.)—G. F. D.

ART. XIII.—*Case of Tumour of the Cerebellum.** By DAVID DRUMMOND, M.D.; Physician to the Infirmary and Hospital for Children, Newcastle-on-Tyne; Joint Lecturer on Clinical Medicine, Durham University College of Medicine, Newcastle-on-Tyne.

AT a period—more than any in the past—when brain disease is occupying the attention of physicians, physiologists, and experimental pathologists, almost more than any other subject within the range of medical science, the following case, which was made the subject of a clinical lecture, may not be without interest. Unfortunately the lesion was not localised, two tumours being present, as well as a large quantity of fluid in the ventricles. However, the record of such cases tends to strengthen the prominence given to certain symptoms in the diagnosis of brain tumours, and it is only by heaping up evidence upon the points already ascertained, and, if possible, eliciting new features, that the diagnosis of brain disease can be made with that degree of certainty which enables a pneumonia or mitral regurgitation to be recognised.

CASE.—W. R., aged six, was admitted into the Children's Hospital, under my care, Sept. 3rd, 1879. He was blind, unable to walk, and complained of severe headaches, and occasional attacks of vomiting. About the month of May, 1878, his parents first observed that the boy's sight was failing; his father's attention was drawn to the fact by the child frequently falling over pails, &c., on the floor. Any earlier statements than this regarding his condition are uncertain and contradictory, for he was an extremely "delicate" child, and the statement, as made by some of the friends, that attacks of headache, accompanied by vomiting, were noticed before the visual impairment, though highly probable, cannot be relied upon; such attacks made no impression upon the minds of the parents—ailing with him being the rule rather than the exception. He continued, however, to attend school, taking an intelligent interest in his lessons, when in the month of July, 1878, he was knocked down by his school-fellows, the left temple being cut. This blow, which was evidently severe, was followed by loss of consciousness for several hours. A fortnight subsequently sight was lost completely. He was then taken to the Eye Infirmary, where he was seen by my friend, Mr. Williamson, who spoke to the condition as follows, when the specimen was shown to the Northumberland and Durham Medical Society. I quote from the Transactions of the Society:—"He was completely blind. On ophthal-

* Being an abstract of a Clinical Lecture delivered in the Newcastle-on-Tyne Infirmary.

moscopic examination the optic discs were found to be atrophied to an extent that is rarely seen. They were small, and almost as white as paper; the edges were irregular and contracted, instead of being round and full. The arteries were mere threads, but the veins stood out large, dark, and tortuous, in remarkable contrast to the whiteness of the disc and the smallness of the arteries. There was a deep bend or knuckle on each of the veins as it passed over the edge of the disc. From these appearances, the fundus generally being healthy, it was concluded that the atrophy was the sequel to an attack of optic neuritis. The swelling of the optic disc, at the time the neuritis is going on, raises and stretches the veins; and when the neuritis subsides, the knuckles remain on the veins," &c. Mr. Williamson at that time concluded there was an intracranial growth, but, owing to the absence of special symptoms, was unable to localise it.

Subsequently, on the 16th Oct., 1878, the child was admitted into the Newcastle Infirmary, under the care of my friend, Dr. Bramwell, who describes his condition as follows (*Edin. Med. Journal*, Aug., 1879):—"He is fairly well nourished; sight almost nil; the optic discs are in an advanced stage of atrophy. The headache is paroxysmal and intense, the pain being referred both to the forehead and occiput. The gait is very unsteady and waddling; even when standing the feet are kept as wide apart as possible. The temperature and pulse are natural. All the other organs are healthy. He remained for some weeks under observation, and was then removed by his friends. No new symptom developed during his stay in hospital." Dr. Bramwell, who gives a very short notice of the case, remarks:—"The uncertain waddling gait seemed to point to its (the tumour) being situated in the cerebellum."

He gradually became unable to walk, or even to sit up, being entirely confined to bed six months before I saw him. Tremor of the arms (especially the right) and legs (slight) was observed about this time. On admission the large head, as compared with the emaciated body and extremities, was very noticeable, and suggested distension of the lateral ventricles by fluid. The left eye looked downwards and outwards, whilst the right had undergone no deviation. Both eyes oscillated in a slow and rhythmic manner, most marked when his attention was attracted—for example, when spoken to, the movements being always a deviation to the left, and then rather suddenly back to the usual position. The tongue was protruded in a tremulous manner; speech excessively slow and syllabic, resembling closely the typical hesitating mode of speech in cases of multiple cerebro-spinal sclerosis. A purely volitional tremor, especially of the right arm, was a very noticeable feature in the case; the legs, when he attempted to move them, were also affected by tremor to a slight extent. This tremor, like the syllabic speech, reminded one strongly of a case of cerebro-spinal sclerosis, appearing with every inner-

vation of the muscles, and completely absent during rest. On careful observation the ocular movements seemed to be of the same character, for although at times the eyes were jerked, without any apparent voluntary movement, yet when they were turned in the direction of a noise the tremor became very exaggerated—the occasional trembling during apparent absolute rest being analogous to the tremor of the head in multiple sclerosis. Taste, smell, and hearing were normal. He could tell what was on the dish for dinner by the odour, before it was brought to his bedside, and those about him in the ward were recognised with marvellous facility by their voices. The child was remarkably intelligent; any apparent slowness of cerebration was the result of the slow, hesitating manner of articulating. Complex movements were performed by the arms and hands, any impairment in coordination being due to the tremor. He could elicit from a liliputian concertina a noise which might be mistaken for a tune. The lower extremities were much weaker than the upper, whilst they could be moved about in a slow and tremulous manner, yet they were unable to sustain his weight; thus, being unable to stand, it was impossible to test his capacity for maintaining the equilibrium. As before stated, he was absolutely blind, the ophthalmoscope revealing the most markedly atrophied discs I ever saw, the arteries thread-like, and the veins, as described by Mr. Williamson, exceedingly large and tortuous. Tactile sensibility all over the body was very slightly impaired, the impairment being with difficulty detected, and perhaps most marked in the lower extremities. The headache was not incessant, but returned in periodic attacks, which were generally weekly, lasting for nearly twenty-four hours, during which time he vomited frequently. All through the case the two symptoms of headache and vomiting were intimately associated. When the headache was severe, the boy lay on his side—generally left—with his head drawn back, the occiput almost resting on the fourth and fifth cervical spines. In this position he would lie in a semi-unconscious condition whilst the headache lasted, only roused by the attacks of vomiting, or when food was pressed upon him, which he generally refused, his appetite at other times being fairly good. The pain was invariably situated in the occipital region; whether slight or intense, the locality never altered. Tapping the bone (occipital) with the finger always gave rise to a complaint of pain.

The head increased considerably in size during the time he was under observation—for example, on the 25th of September it measured 53 centimetres, and on the 17th of October, 55½ centimetres—an increase of 2½ centimetres in three weeks. The coronal suture could easily be felt.

On the 1st of November the boy had a convulsion. During a period of severe headache, which was characterised by more intense pain and

nearer approach to unconsciousness than usual, it was noticed that the spinal column was completely arched (opisthotonos). This condition of rigidity lasted for fifteen or twenty minutes, and then for three or four minutes clonic spasms of the right arm and leg ensued. At the same time the right eye was markedly turned inwards, the pupil being almost hidden.

Gradually emaciating, and complaining more frequently of headache, but without developing any new symptom, the lad died on the 4th of December, three months after admission into hospital, and about a year and eight months from the time when the symptoms were first observed. His memory or other mental faculties had never been in the slightest degree impaired. Four or five days before death he discussed most intelligently, with his mother, the joys of the approaching Christmas, recalling past experiences of the same. Latterly he had completely lost control over the sphincters—rectal and vesical.

Post mortem.—The calvarium was very thin, being almost membranous. The sagittal and coronal sutures were gaping, admitting of slight movement between the bones on compression. The skull-cap was adherent to the cerebellum, by strong adhesions, which had to be torn through before the bones could be raised. The surfaces of the lateral hemispheres, which were full and extremely soft, shook with a tremulous motion when exposed. The lateral ventricles were enormously dilated, and contained a large quantity of clear fluid.

The bone surface to which the cerebellum was adherent was not at all corroded, the adhesion taking place through thickened membranes, which were more strongly attached to a mass in the cerebellum than to the bone. The cerebellum was much increased in size, the increase being due to the presence of two tumours, the larger an irregular-shaped conical mass, the base of which occupied a great part of the right posterior superior and posterior inferior lobes, the apex extending across the veriform process to the left hemisphere. Although better seen on the upper surface, the tumour extended through almost the entire depth of the organ. It measured $8\frac{1}{2}$ centimetres from side to side, $5\frac{1}{2}$ of which were in the right hemisphere, and 3 in the left. The base of the cone measured $3\frac{1}{2}$ centimetres in depth in a vertical direction, and 4 centimetres in an antero-posterior one.

There was also a small tumour occupying the so-called central lobe of Reil, just behind the corpora quadrigemina. This tumour was of an almond shape, and, as seen in the drawing, was exactly bisected by a section in the middle line, the long axis of the tumour being antero-posteriorly directed. It measured 3 centimetres in length, by nearly 2 in breadth.

Both tumours, on section, were exactly similar in appearance, being firm, and of a yellow colour. The larger contained several small cavities.

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They were evidently scrofulous in character. The rest of the brain was apparently healthy, though rather soft. The spinal cord appeared to be healthy.

The thoracic and abdominal organs were perfectly normal. Beyond slight congestion of the right lung, there was no pulmonary disease.

The accompanying drawing shows well the fresh appearances of the cerebellum. A section was made through the middle line in an antero-posterior direction.

The case I have thus briefly recorded is almost a typical example, from a clinical point of view, firstly, of an intra-cranial growth in general—i.e., gross disease of the brain—and, secondly, of a cerebellar tumour in particular; the evidences of gross brain disease being three, the so-called cardinal points, and upon which too much stress cannot be laid—viz., *headache, vomiting, and double optic atrophy, the result of neuritis*; for had the case been seen at an earlier stage, double optic neuritis would undoubtedly have been recognised—not that optic neuritis is an invariable result of intra-cranial tumour. This point Dr. Hughlings-Jackson has recently touched upon (*Brit. Med. Jour.*, Feb. 7, 1880, p. 197). In two cases which have, within the past few weeks, come under my notice, it was absent—one, a case of my own, a young woman, obviously suffering from cerebellar tumour, in whom the only ophthalmic change is syphilitic choroiditis of the left eye, the right fundus being normal. The other case I saw through the kindness of my colleague, Dr. Oliver, under whose care the patient was; it was that of a man who was admitted for multiple tumours of a lympho-sarcomatous character. Suspecting brain disease, his eyes were examined, but both discs were normal. A few weeks subsequently he died, and the *post mortem* revealed, besides the other tumours, several growths in the brain, two of which were about the size of walnuts.

Though cases of cerebral tumour are occasionally seen without distinctive ophthalmic changes, yet it is the rule undoubtedly to have double optic neuritis. Of five cases of intra-cranial tumour at present under my care, it is a marked symptom in four.

The localising features which pointed to the cerebellum as the probable seat of the disease in my patient, the subject of the present communication, were, first, a *reeling gait*—a fact noticed by Dr. Bramwell, and described to me by the parents of the child; second, the situation of the pain in the back of the head; third, drawing back of the head, which occurred occasionally in

exaggerated paroxysms. On one occasion the condition of opisthotonos was noticed.

In discussing the clinical features of the case in the light of the *post mortem* appearances, it is difficult to eliminate the causative influences of the hydrocephalus. The presence of a large quantity of fluid in the lateral ventricles, of course, detracts from the accuracy and importance of observations relative to symptoms depending upon the situation of the disease. It will be conceded that the motor paralysis was the result of the fluid, the absence of sensory paralysis from the same cause simply bearing out what has long been known to be the case, especially in the spinal cord—viz., where motor and sensory tracts are alike subjected to pressure, the latter can resist, in a remarkable manner, the baneful influence, whilst the function of the former is early impaired. It is rather strange that the special senses of hearing and smell should have been unimpaired, for, from the position of the larger tumour, the acoustic nuclei and the striæ medullares, as well as the sensory nuclei of the trigeminus, must have been subjected to considerable pressure, whilst the parts of the cerebrum to which the olfactory nerves are traced—which nerves easily fall victims to the presence of intra-cranial growths, either directly or indirectly—could scarcely escape.

It is difficult to account satisfactorily for the tremor, the presence of fluid failing, I think, to do so. The tremor described above is not like that usually noticed in cases of chronic hydrocephalus, which appears to lack somewhat the distinctive volitional character, in the sense that it is markedly increased upon energetic voluntary movement. Perhaps it may be ascribed to some influence of the tumour upon the corpora quadrigemina and the pons—the smaller tumour encroached almost upon the testes—for it is usual to associate the tremor of multiple cerebro-spinal sclerosis with the presence of “sclerosed plates” in the pons, medulla, and cerebellum. Scrofulous tumours are more frequently found in the cerebellum than in any other part of the brain; it is, however, rather unusual to find, in such cases, all the other organs of the body free from tubercle. A microscopical section of the optic nerves showed the axis cylinders to be markedly atrophied. There were numerous bands through the section, which stained well with carmine, and which were taken to be processes of young connective tissue. The axis cylinders—cut across—did not take the carmine staining at all well.

ART. XIV.—*Observations on a Case of Fatty Heart ; with the State of the Organ Found, and also that of the Par Vagum.** By HENRY KENNEDY, M.B., Physician to Simpson's Hospital, and to the Whitworth Hospital, Drumcondra.

AT the present time, when so much attention is being given to the subject of fatty disease in every form, I have thought the following case might be considered worthy of notice. It affords a good example of one of the forms of fatty heart, and yet a form of the disease about which more requires to be known, inasmuch as examples of the kind are comparatively rare. But, before making any remarks of a general character on the subject, it will be best to give a short sketch of the case itself:—

CASE.—A woman of forty years of age, unmarried, was admitted into the Whitworth Hospital, Drumcondra, in the month of January just past. She was so ill that she had to be carried to the ward, and, when visited, it was obvious she was a dying woman. The face was perfectly bloodless, whilst the pulse at the wrist could scarcely be felt. Yet her mind was very clear, and her answers to questions quite distinct. But there was this peculiarity about them—that they were given with extraordinary slowness. No one could fail to observe it. I learned that in June, 1879—that is, about seven months previously—she had a polypus removed from the uterus. Shortly after she was attacked with dysentery, which had continued to the time of her admission, and had reduced her to the present state of utter prostration. The discharges were involuntary, and there was a very unpleasant odour about the bed, even within a few hours of her admission. Commencing arcus could be noticed on the upper portion of each cornea. On applying the stethoscope over the heart both sounds were very distinct, and had each a well-marked musical character ; but there was no morbid sound—as those words are commonly understood. The heart beat 56 in the minute, was quite regular, and each beat conveyed the idea of slowness. I had no difficulty in diagnosing the existence of a fatty heart, arising from, or in the course of, the weakening diseases to which the poor patient had been subjected. In the state described she lived five days, during which period she had a very violent attack of vomiting, which lasted nearly two days, and then stopped, as suddenly as it had commenced, some hours before her death. For the *post mortem* examination I am specially indebted to Mr. Foy, a Fellow of the College of Surgeons, and our assistant in the hospital. It had to be done by artificial light, and was,

* Read before the Medical Society of the College of Physicians, Wednesday, March 3, 1880. [For the discussion on this paper see page 322.]

of necessity, not so complete as could have been desired. He obtained, however, for me the heart, and also a portion of either vagus nerve as it enters the thorax, crossing the subclavian arteries. The heart I now present, and its characters will at once be seen. It is, I believe I may say, atrophied—weighing exactly $6\frac{3}{4}$ ounces, being probably an ounce, or nearly that, under the average weight. To the naked eye it is pale and faded, whilst under the microscope it presents a very good example of fatty degeneration—of that form, in parts at least, which is now known as tabby striation. Elsewhere it presents the more common form of fatty change. The valves are perfectly healthy, as is also the aorta. The amount of fat on the organ itself may be described as considerable. The two portions of the nerves being placed under the microscope, it was at once observed that there was a marked contrast between the two; for whilst the left was healthy the right was plainly diseased, and by fatty change. To this fact I would ask particular attention, for reasons to be given further on. It should have been stated before that the fat of the body was not at all so much reduced as might reasonably have been expected.

The case just given may be considered very typical of one of the forms of fatty heart—such as has been described, several years since, by Dr. Wilks. It bore out, in every particular, I may say, what that gentleman has advanced. The long and wasting diseases from which the patient had suffered, the comparatively early age, and the preservation of the fat of the body, were all in keeping with what he has stated. He has not, however, given us the weight of the organ in any instance, and this is to be regretted; for I rather think in this class of cases the heart is frequently, if not commonly, under the average weight, as I assume it was in my case—in fact, I believe this point to constitute an important part of the natural history of this form of the affection. In addition, I would call attention to the state of the nerves, for whilst the left vagus was quite healthy, the right was distinctly diseased. I am not sure that any definite knowledge has as yet been advanced which would go to prove that there was any necessary connexion between disease of the nervous trunks and the organ they supply—I mean in the relation of cause and effect. Several writers, it is true—and amongst them Quain—have stated that in fatty degeneration both the nerves and blood-vessels of the part suffer; and we know that different parties have detailed cases where the fatty change in the muscle seemed to be due to disease of the artery supplying the part, inasmuch as the surrounding parts were quite healthy. But it is in a different point of view I would here speak

of the subject, and which the case I have detailed illustrates, for you will recollect that the disease of the nerve was at a considerable distance from the heart itself, and also that it was the right nerve was the one diseased; for to it has been attributed a more direct influence over the organ than what the left confers; and, as bearing on this point, I must say it was curious to find that the pulse in the patient beat but 56 in the minute, whilst her state otherwise would certainly have led us to expect that it would have been very rapid. For myself I believe that the slow state of the pulse was mainly due here to the state of the nerve, which we know has a controlling power over the beats of the heart, and that it is in this way we are to explain those cases of fatty degeneration where the pulse becomes so very slow. It would surely be going against all experience, as well as physiological knowledge, to say a diseased nerve could exist without affecting the organ in some way or other. And this idea naturally leads on to the question—What is the proximate cause of the fatty diathesis? where does it originate? Is it in the part itself? or is it in the blood-vessels or nerves? For myself I do not venture to give an answer to this question. I may, however, state my impression that the process arises from malnutrition, and that very early in the process the nerves take on diseased action of a very low kind—in fact, I would give a greater prominence to the nerves, and the same when diseased, than has been hitherto accorded to them. Sir James Paget has advanced a somewhat similar opinion, but he does not speak at all of the nerves as being specially involved in the process. To the consideration of this point I would venture to call particular attention. It is scarcely necessary to speak of the state of the valves in the case which has been given, having spoken of the subject elsewhere. I may say, however, that I believe no form of fatty heart affords so many examples of healthy valves as the one brought under notice this evening—that is, where long and weakening discharges have lowered the system. Not only are the valves in such cases commonly healthy, but I have seen them in a state that seemed to me to be one of atrophy, so attenuated did they appear. It is in such, I believe, the sounds give a distinct musical ring to the ear—not one, be it observed, but both sounds doing so; and I rather think when this state exists we may diagnose the presence of fatty heart—most probably in the form brought just before you. But further observation is required to establish the point.

The attack of vomiting, so sudden and severe, calls for a brief notice. It is now known that it is of common occurrence, and particularly towards the termination of these cases. Still I have seen cases where, after it ceased, the patient lived many days. In the instance brought forward, however, the patient only lived a few hours. This vomiting is often remarkable for its great suddenness, and coming on, as it does, when life is hanging by a very slender thread, it is not to be wondered at that death frequently ensues after it. As to its cause, I have not been able to ascertain any. My impression is that owing to the languid circulation a sudden congestion of the stomach may arise, and so cause it. But this idea still requires proof. It will be well to keep in mind the possibility of the vomiting being due to the state of the brain which is met in these cases. In the common form of hydrocephalus, vomiting, which frequently is intermitting, is almost of constant occurrence.

The last point I would notice is the slowness of the speech, which in this case was very remarkable. It is scarcely necessary to say that it pointed to the brain, and more particularly the medulla oblongata, as being diseased, like the other parts of the body; and, though the head was not examined, still I have no doubt whatever that a quantity of serous effusion would have been found, together with degeneration of parts of the brain, in which fatty change played a very prominent part. I have examined similar cases, and always found the state of parts described.

ART. XV.—*On a Case of Extensive Varix.* By WILLIAM THOMSON, F.R.C.S.; Surgeon to the Richmond Hospital, and Member of the Surgical Court of Examiners, Royal College of Surgeons, &c.

A YOUNG man lately presented himself at the Dispensary of the Richmond Hospital, for relief of some genito-urinary affection, and in making a local examination I found that he was the subject of a very extensive varicose condition of the veins of the lower part of his body. The whole of the veins of the legs and thighs were very much dilated, and he was suffering from a typical varicose ulcer on the left lower extremity. The course of the saphenous vein on each side could be well traced by its irregular windings until it terminated in the femoral. Along the back of the limbs the superficial vessels here and there formed purple patches, and this condition was also to be noticed at some points

on the anterior aspect. Towards the saphenous openings, the tortuous, dilated veins from the thigh, ilium, and abdominal walls gathered in knotted clusters, while at the point corresponding externally to the femoral canal on each side was a prominent tumour about the size of a chestnut, and bearing, at first sight, some appearances of a hernial protrusion. Examining the anterior surface of the abdomen, the whole of the superficial veins were found to be considerably dilated, standing out like cords under the skin, and all being distinctly traceable in their course towards the larger vessels at the groin. This condition ceased at the ensiform cartilage in front, but on the left side the veins could be traced upwards towards the axilla in a somewhat dilated, but not tortuous, state. Examining the upper portions of the body, there was no trace of interference with the circulation. The thorax, with the exception stated, from a transverse line corresponding to the lower end of the sternum, was free from enlarged veins, and the neck and arms were likewise unaffected.

The patient stated that in July, 1873, while in England, he fell into bad health, his chief symptom being lumbar pain, and weakness so great that he could not walk, and that he was often obliged to relieve himself by pressing his open hands tightly over the loins. He was under medical care for three weeks, when he noticed that "his body swelled," but after this the "swelling fell into his legs." The doctor examined his urine, and said it was "very bad," but did not make any reference to his liver. He returned home, and was ordered warm baths, which weakened him very much, but he was well enough to go back to England in October. It was three weeks afterwards that he first noticed the swelling in the veins, but he never spoke of them until I noticed them at the dispensary. On his return to England he had secondary syphilis, but the symptoms disappeared under treatment. He is subject to constipation.

The questions to be determined appear to be—the nature of the obstruction, and its position. This condition of superficial veins about the body is not an unusual result of abdominal or thoracic tumours, although in no case that I have seen has there been anything approaching the enlargement and tortuosity that exist in the present instance. Aneurism is one of the commoner causes of obstructed venous circulation, by pressure upon the neighbouring vessel, but I have not been able here to find a trace of that disease. We are next thrown back upon some affection of the liver, by

which the cava has been diminished in size, or obliterated. Such a condition might arise from many causes, among which may be mentioned cirrhosis, malignant disease, or syphilitic deposits. Wilks, in Vol. XXIII. of the London Pathological Reports, mentions a case of a sailor who, suffering from ascites and œdematous limbs, had his abdomen tapped. He subsequently died, when the liver was found to be cirrhotic, the cava being much narrowed by contraction of the surrounding fibrous material. But this condition is hardly to be expected in so young a patient, and examination does not reveal it. Malignant disease, with such a history, may be set aside at once, and we have then to deal with the probability of syphilitic deposit. To this there is the objection that the syphilitic infection of the body has not reached that stage when we might expect such a condition of the liver; and broadly it may be said that there are no special symptoms of disease in that organ, if we except the sluggish bowels, dependent probably upon functional inefficiency of the gland. Moreover, it is obvious that, with hepatic obstruction, we should have the portal circulation in turn impeded, and a resulting effusion into the abdominal cavity, which does not exist.

Descending further we come to the kidneys; and here it seems probable from the history that some mischief originally existed. The patient states that his doctor told him the urine was very bad; but whatever the condition then was, there has not been any permanent interference with both the renal veins. He does not exhibit any external symptom to indicate such a state of things; and an examination within the past few days revealed perfectly healthy urine. If one was interfered with, the other kidney is certainly doing its work satisfactorily.

I believe, then, that the obstruction, whatever its nature may be, does not lie above the renal veins, and that it probably exists between these and the common iliacs, although one of the renal vessels may be involved.

As to what the affection was which originally produced this obstruction I confess I am not quite satisfied. The possibility of a tumour can hardly be entertained. Of course there are many which might occur in this region. But here the history is one of a pain occurring suddenly, followed in a short time by œdema of the limbs and enlargement of the veins. Whatever the disease was, the beginning of the obstruction was then accomplished.

The cases on record are not numerous; but the reports I have

consulted suggest the probability that there was phlebitis occurring from some cause, perhaps in a collateral vessel, but ultimately involving the larger trunk, and occluding it. Thus, Dr. Andrews (Path. Soc. Lon., Vol. XVI., p. 93) mentions the case of a woman who died of epithelioma of the uterus. The inferior cava was obliterated for about one inch from a point just below the entrance to the right renal vein. The left renal vein was impervious, the blood from that kidney having been returned partly by a vein passing up into the left supra-renal capsule, but principally by a large vessel passing downwards and backwards to join the venous plexus on the sides of the vertebra, by means of which the blood from the lower part of the body appeared to have reached the vena azygos, which was of unusual size. The obstruction was due to an organised clot, the vein being converted into a fibrous cord. There was no enlargement of the superficial veins of the trunk.

Moxon (Path. Soc. Trans. Lond., Vol. XXI.) mentions a case of pyæmia in which the inferior vena cava was occupied in its whole length by a clot. It extended from the iliacs, both of which were filled by a like clot.

Ogle reports a case (Path. Trans. Lon., Vol. VII.) in which, below the entrance of the left renal vein, the entire cava was filled by a firm fibrinous indurated material, and was shrunken and reduced to the state of a dense thick cord. This was of very old standing, as the contained material was with great difficulty separable. The superficial and abdominal veins were greatly enlarged, and there were ascites and anasarca.

SUCCESSFUL TREATMENT OF INTESTINAL OBSTRUCTION BY INJECTIONS OF WATER.

DR. MARIANO (*Raccoglitore Medico*, Vol. XII., and *London Med. Record*, March 15, 1880) gives details of three cases of intestinal obstruction successfully treated by injections of water. The first case occurred in a woman, aged twenty-five, in whom symptoms of obstruction had followed upon an attack of peritonitis. Six litres of fluid were injected and retained. The second case was one of intussusception. The third apparently depended on some twisting of the intestine high up. In this case treatment was persevered in for five days, with eventually a successful result.

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON THERAPEUTICS.

1. *A Handbook of Therapeutics.* By SYDNEY RINGER, M.D. Eighth Edition. London: H. K. Lewis. 1880. 8vo, pp. 671.
2. *Modern Medical Therapeutics.* By GEORGE H. NAPHEYS, A.M., M.D., &c. Sixth Edition, enlarged and revised. London: Baillière, Tindall, & Cox. Philadelphia: D. G. Brinton. 1879. 8vo, pp. 607.
3. *The National Dispensatory.* By A. STILLÉ, M.D., and J. MAISCH, Ph.D. With 201 Engravings. Royal 8vo, pp. 1628. London: J. & A. Churchill. 1879.

As the first two of the three volumes before us have passed through several editions, they may be regarded as practically beyond the reach of unfavourable criticism.

1. Of Dr. Sydney Ringer's well-known "Handbook" a new issue takes place every twelve or eighteen months with a regularity which must be most gratifying to its painstaking and popular author. While we cannot commend the apparent want of system in the arrangement of the subject-matter, we are bound in fairness to say that Dr. Ringer keeps well abreast of the progress of therapeutics in every edition of his work.

In a former notice we alluded in terms of approbation to the analytical index which Dr. Theodore Maxwell compiled for the sixth edition. In this most useful portion of the work, however, there are some strange omissions. Thus, no mention is made of the value of ferric chloride in some cases of acute rheumatism and in many cases of scarlatina, although its beneficial effect in diphtheria and in erysipelas is spoken of.

In congratulating Dr. Ringer on the success which his book has so deservedly attained, we would suggest that the unfortunate digression on the incubation-periods of the exanthemata, which is to be found on pages 67 *et seq.* of the present issue, should be omitted from future editions.

2. Although "Modern Medical Therapeutics" by the late Dr. Napheys presents many points of resemblance to the "Handbook of Therapeutics," yet it is essentially different from the latter, inasmuch as Dr. Napheys originally adopted a definite system in the compilation of his treatise, to which the editor of the present edition adheres. We notice, *en passant*, that the editor's name nowhere appears in the volume. The book is divided into eight parts or chapters, each of which is devoted to the management and treatment of a special group of diseased conditions. The subjects of the eight parts are respectively the principal Diseases of (1) the Nervous System, (2) the Respiratory System, (3) the Circulatory System, (4) the Digestive System, (5) the Urinary System, (6) the Blood, besides (7) Diseases of Children, and (8) Toxic Diseases.

Under the general nosological division to which they belong we find the diseases arranged in alphabetical order. The treatment of each is first stated as given by different practitioners, then as carried out in various hospitals. A *résumé* of the more important remedies—employed in accordance with the indications of the disease—follows, those remedies which are specially recommended being denoted by an asterisk. American, English, and Continental practitioners are quoted in nearly equal numbers, and we cannot but admire the impartiality with which the views of the various physicians are put forward.

At the end there are three alphabetical indexes—the first gives the authors' names, the second tabulates the remedies or remedial measures, while the third enumerates the diseases which are mentioned in the book.

Taken together, these companion works by Sydney Ringer and Napheys do adequate justice to the important branch of medical science of which they treat.

3. This portly "Dispensatory" purports to give a concise but complete statement of all that is of practical importance both to the pharmacist and the physician. The authors claim attention on the ground "that years of constant labour have been devoted to the task of producing a work to which the inquirer may refer with the certainty of finding everything which experience has stored up as worthy of confidence in the subjects embraced within its scope," and they may be congratulated on the execution of a very valuable work, rich in information and almost encyclopædic in character. The arrangement is alphabetical, and in the treatment of the

separate articles detailed botanical descriptions are generally omitted, while the chemistry is accurately and succinctly explained, using the modern notation.

For the first time in a Dispensatory we have presented a condensed account of the physiological action of medicines, and in treating of therapeutics the authors' plan is to briefly set forth the most trustworthy results of clinical experience without discussing the grounds upon which they rest. Here and there we meet with a sentence which shows in a few words that the authors have with a rational scepticism exercised a prudent reserve in admitting the reputed virtues of new drugs, and our readers may be glad of some illustrations of the conclusions at which they have arrived. Thus, speaking of *Hamamelis*, which has attracted some slight attention, we are told that "the accounts published of the remedial virtues of witch-hazel seem to be as hard to accept as the popular faith in it as an infallible divining rod. . . . To the tannin it contains, and to a peculiar bitter principle, some of its alleged sedative virtues may be attributed" (p. 690). In an American work we naturally turned to the description of dialysed iron, and the verdict as to its merits is:—"On pharmaceutical grounds the action of dialysed iron upon animal products forbids us to suppose *à priori* that it acts like other ferruginous preparations, and a very competent authority (Bouchardat) has declared that, theoretically, dialysed iron must be regarded as an inert or at best a very feeble preparation of iron. We have found it utterly to fail in cases for which iron appeared to be the proper remedy, and which other preparations caused to speedily improve. . . . If the views elsewhere expressed of iron as an antidote to arsenic be correct, the proposed use of dialysed iron for the purpose is unwarranted" (p. 641). A fashionable drug at present is gelsemium, or yellow jasmine, but the following judgment throws a damper on our therapeutical ardour:—"Gelsemium appears to be one of those too numerous remedies which have been used in a great variety of sthenic febrile diseases, upon no better ground than their power of lowering the pulse and depressing the nervous system. Incalculable mischief has been produced by them, and more is likely to be occasioned by gelsemium in febrile affections. . . . Among a host of incongruous diseases which are said to have been 'cured' by this agent, the one in regard to which very positive testimony exists is acute or rheumatic *neuralgia*, especially of the first and second branches of the fifth nerve. . . . The proper *antidote*

for poisoning by gelsemium is morphia hypodermically administered" (p. 664).

After a careful examination of its contents, we have detected very few inaccuracies or important omissions in this volume, which must be considered of great value as a work of reference, and one which fully sustains the high reputation of its distinguished authors.

Ocular Therapeutics. By L. DE WECKER, Professor of Clinical Ophthalmology, Paris. Translated and edited by LITTON FORBES, M.A., M.D., F.R.G.S.; late Clinical Assistant, Royal London Ophthalmic Hospital. London: Smith, Elder, & Co. 1879. 8vo. Pp. 552.

SECOND NOTICE.

IN his lectures on "Divisions of the Crystalline Lens" the author draws attention to the congenital nature of zonular cataract, and the frequent error of teachers fancying that such children are merely short-sighted, the myopia being developed by the call on the accommodation in bringing objects close to the eyes to permit of their being seen. "Permit me," says Dr. de Wecker, "to give you a piece of sound advice, and that is, to operate on children very early—however young they may be." The disuse of the eye for several years is certain to leave a comparatively weak organ. Carefully performed division is the operation advised, and the caution is enforced of "keeping well to the surface of the lens." He discusses the formation of a pupil by means of Mr. Critchett's operation of iridesis, but prefers, in zonular cataract, iridomy, or a modified artificial pupil, performed with his small stop keratome; the portion of iris removed is adjacent to the edge of the pupil, the periphery of the iris being left intact.

Anterior polar cataract, the author associates with an abnormal contact of the capsule with the membrane of Descemet, congenital irregularities—as intra-uterine perforation, persistent pupillary membrane, microphthalmos—being attendant frequently on its occurrence, true congenital posterior polar cataract having, he considers, as its cause a persistent hyaloid artery, the end of the artery remaining attached to the posterior surface of the lens. "Simple congenital cataract," he states, "is not correlated with any malformation of the eye." Any operative interference should be adopted very early. We have our choice in these soft cataracts of the operation by division, a combination of division and extraction, or

linear extraction. It is true that in these cases it is impossible to lay down a hard and fast rule; much will depend on the consistency of the cataract, the age of the patient, or other circumstances; but, in our experience, the combined method—of division and subsequent extraction—offers perhaps the safest and most certain results. “In juvenile cataract, the best operation,” according to Dr. de Wecker, “is linear extraction.” In relation to wounds of the crystalline, the summary of the treatment advised is as follows:—Eserine, iridectomy if necessary, extraction of the lens—which should not be attempted “until the eye has recovered its normal condition of filtration, that is, of tension.” He deems it better to postpone the operation of linear extraction in adults until six or eight months after the original injury to the lens.

Certainly our experience hardly corresponds with that of Dr. de Wecker in this respect. It has been our practice to remove the lens by needle operation or by extraction, either immediately, or after recovery from iridectomy, when that step was indicated, or within a reasonable time from the receipt of the injury—nothing contra-indicating—by linear section, or at times by means of the suction-syringe of Mr. Bowman. We have, at this moment, two such cases under our care, where a combined operation of division and extraction was carried out at one sitting, with the best results.

Spontaneous luxations of the lens, as described by Becker, account for the disappearance of a cataract at times. This luxation depends upon the relation held by the zonula to the vitreous and capsule of the lens. Detachment of the capsule from the suspensory ligament follows on shrinking of the lens, and luxation occurs during sudden movements of the lens. Sclerotomy, the use of eserine, and the performance of iridectomy, subsequently, if cataract forms, are advised in cases of subluxation of the crystalline. In alluding to the changes taking place in the lens during the cataractous process, Dr. de Wecker notices the important point in practice of distinguishing those cases in which the changes are progressive from such as are stationary. In nervous patients it is specially necessary to avoid giving rise to premature alarm. Over and over again it has occurred to us to see considerable changes in the lens reach a certain stage and then cease, the vision not being much interfered with.

It often is a matter of great difficulty as to the opinion we may give to patients. We may not wish to alarm unnecessarily, yet we must guard our reputation from an imputation of ignorance in

withholding the truth. The extent of the opacity, whether involving the poles, the entire substance of the lens, the presence of "particles scattered through the cortical masses," will, to a certain extent, guide us. But the warning of Dr. de Wecker is absolutely true—that the most experienced surgeon may err in an effort to foretell the growth of a cataract. It is better, while stating to the patient fairly the probabilities in his case, to refuse to state anything absolutely as to the progress of a cataract, or the time a given cataract may take to mature.

Chapters XXIX. to XXXII. deal principally with the operative procedures in cataract. Senile cataracts Dr. de Wecker divides into cortical, hard, nuclear, capsulo-lenticular. He lays special stress on the adaptation of the size of the section to the size and consistency of the cataract—the colour depending on the degree of sclerosis, the extent of cortex involved, the retrogressive changes in the cataract, and the fluidity of the superficial portion. The author regards the cataract as ripe, or otherwise, according as there is a uniform tint extending to the entire border of the pupil, when the layer beneath the anterior capsule has undergone complete cataractous change, the iris projecting no apparent shadow on the cataract—this knowledge influences the size of our section, and the feasibility of operation on unripe cataracts; when, in short, patients can no longer read. Here a large section and a considerable iridectomy are advised. But most important is the caution to thoroughly clear the pupil, to leave no *débris*. But it is absolutely true that, whether in shrunken nuclear cataracts, with semi-transparent cortical masses, or in the large pasty cortical varieties, the great danger consists in limiting the size of the section, involving subsequent difficulty in the escape of the lens, and perhaps enlargement of the incision, with consequent contusion of the parts. The troublesome "white patch" so often coming in our way in capsulo-lenticular cataracts, he avoids touching with the cystotome, rather "coasting along the upper border of the lens above the opacity, forming a button-hole slit, in the healthy portion of the capsule;" he extracts the capsule with an iris forceps. The careful diagnosis of the accessory conditions, which may complicate cataract, is of the utmost moment in deciding on the operation for cataract.

The method we have for many years adopted of testing the sensibility of the retina in these cases is as follows:—The patient is placed as for ophthalmoscopic examination, the flame of the burner lowered to what is just sufficient to throw the faintest

reflection with the ophthalmoscopic mirror on the eye; this pencil of light can be then directed on different parts of the cataractous eye, and, though not an infallible test, still for all practical purposes it is sufficient. Dr. de Wecker approves of this plan, as also of the use of an ivory knob pressed lightly on the sclerotic, to detect the presence or absence of phosphenes.

In determining the all-important question as to the pre-existence or co-existence of glaucoma and retinal changes, one must be guided by the history of the case, the tension of the globe, and the sensibility of the retina to light. It were, perhaps, well also that in cases in which previous ophthalmoscopic examinations have been made, the surgeon proposing to operate should, for his own as well as for the patient's sake, ascertain the result of such examinations. It might save, as we have personal knowledge it would have done, a comparatively useless operation, or at least secure a more guarded prognosis as to the probability of a successful issue. Nothing can be of greater importance than for a surgeon to recognise the earliest trace of cataract. He must, of course, be discreet in the announcement he makes to the patient, bearing the fact of its uncertain progress in view; yet he can generally save himself from future imputations, by a cautious expression as to the fear of this contingency, from certain present appearances, unless such and such precautions be adopted—as, for example, the avoidance of stooping occupations, the use of a desk which brings the work on the same level with the eye, moderation in work by artificial light, prudence in diet, checking injudicious practices—as, for example, dipping the eyes in cold water, under the idea that it strengthens them. In this, as in many other matters in ophthalmological work, the surgeon may for a time have to submit to unjust criticism, awaiting the verification of an honest opinion; but let his “faith in time be large,” and he will find that this, most certain of all tests, will eventually bring all things right. Some years since we lost the confidence of a patient because we pronounced an incipient cataractous change to be present in both eyes; the patient had extensive peripheral changes in one eye, and an old iritic complication with slight adhesions in the other. He was elsewhere treated, almost immediately afterwards, with setons in the temples, and other constitutional means, adopted for what, he was assured, was *not* cataract. He now has had both eyes operated on for cataract; the use of a little atropine and an examination by oblique illumination might have prevented the error. It should be the fixed rule in all

cases of doubt to employ this method in the examination of an eye.

We may briefly epitomise the modifications adopted by the author in Von Graefe's operation. The flap is made two millimetres in depth, and it falls exactly in the corneal border. We have long seen the force of his plea that the most successful results are to be obtained with a flap whose apex is slightly below the upper margin of the cornea (half a millimetre); bleeding is avoided, so are large iridectomies. Dr. de Wecker's peripheral flap operation, the steps of, and his results of two years' operations, performed in his clinique in Paris, we published some few years since. It was then for the first time that the value of eserine after cataract operation was shown. In this operation the pupil was not interfered with; the entanglement of the iris was avoided, and the danger from large section lessened by the eserine, employed both before and after operation. The antiseptic properties of this medicine should be remembered. No one will dispute the extent to which ophthalmic surgery is indebted to Dr. de Wecker, for his advocacy of the use of eserine. Of late we have been employing a partially antiseptic method in cataract extraction, and indeed in all operations on the eye; besides washing of the lids previously, dipping the instruments in carbolic solution, all the sponges are kept in a weak solution of carbolic acid (a few grains to the ounce), the upper and lower lids of both eyes are fixed with a light splint of isinglass plaster, and the cross pieces laid so as to prevent any movement at the same time that the free passage of discharge is permitted; over this is placed some linen which has been previously soaked in boracic acid, and then a Liebreich's bandage. We find this an admirable dressing, much superior to that by cotton wool. The number of suppurations in his clinique, Dr. de Wecker says, is from one to three per cent. Since atropine has been abandoned the number of these disheartening cases has been reduced; our percentage of suppurations in extractions for the past ten years has been from four to five per cent., varying in different years. We have, however, in hospital an extremely unfavourable class of patients to operate on; often very poor, badly fed, and coming from miserable surroundings. We have no experience of, nor does the author seem to approve of, operation under the antiseptic spray.

For secondary cataracts, free from iritic adhesions, the author advises division with two needles, held well slanting to the cornea, so that this lacerating movement may be made in a plane parallel

to the iris. This operation is followed by the use of atropine. We prefer to use fine sickle-shaped needles for this operation always. We can speak confidently of the value of the scissors-forceps in performing capsulotomy where adhesions are present. Iritomy is, doubtless, the step in cases where, unfortunately, iritis and iritic complications bring about closure of the pupil after cataract. Certainly it is to be preferred, in our experience, to iridectomy for troublesome cases. An opening, answering all the purposes of a central pupil, may be then cut with the scissors of Dr. de Wecker. With care any chance of escape of vitreous is reduced to a minimum.

We think it important to quote Dr. de Wecker's own words in describing the operation:—"While the assistant raises the lids with the speculum—which must not be screwed tightly—the blunt scissor forceps are to be introduced, and the pointed blade passed under the iris. The other blade is to be advanced three millimetres beyond the border of the pupil on the side opposite to the wound. One rapid snip with the blades, which are to be at once withdrawn, will suffice to secure a perfectly oval black pupil." Dr. de Wecker describes a combination of iritomy with iridectomy. In this method he removes a triangular portion of iris and the adherent cataract, by passing his stop-knife through the cornea, iris, and cataract, and thus facilitating the introduction of the scissor forceps (*vide* p. 346). There can be no doubt that the remarks as to the operations of Lebrun and Liebreich for cataract are, in a large number of cases, open to the objections raised by Dr. de Wecker—namely, that they give rise to serious danger from iritic complications with both cornea and capsule. Lectures XXXIII. and XXXIV. are devoted to the consideration of diseases of the vitreous humour. Inflammation of the vitreous humour he recognises under these forms:—Liquefaction, condensation, suppuration. Sometimes we meet with all these three forms in an eye on the verge of suppurative hyalitis with choroiditis caused by the lodgment of foreign bodies in the vitreous. Pathologically, he recognises opacities (1) from cell immigration, and (2) from destruction of the stroma itself. Clinically, he describes dust, filaments or flakes, and membranes. The first he regards as amœboid in its source; the second, as largely hæmorrhagic; the third, as organised masses, often connected with fevers and exudative choroido-iritis.

Both extravasations and vitreous dust particles are absorbed with

surprising rapidity at times—a warning to us to give a cautious prognosis in such cases. Not long since a patient came to hospital with the vision suddenly obscured. On examining him with the ophthalmoscope the vitreous was found full of those fliform opacities, and, in parts, large flakes. The appearance was quite characteristic of acute hyalitis. The patient (a porter) had a seton inserted in the temple on the first day and was given an iodide of potassium mixture. He refused to remain from his work. He remained away from hospital for about twelve days. On returning to ask to have the seton removed, we found the eye quite restored and the fundus normal, no trace of any lesion existing. The injection of pilocarpine Dr. de Wecker speaks well of, and the external use of the same. The use of continuous currents is also referred to. We have just removed an eye for a wound caused by the entrance of a piece of dynamite percussion-cap into the globe. The copper entered at the sclero-corneal border above, wounded the lens, and lodged in the vitreous. The eye was removed on the fifth day, as we felt assured of the presence of the foreign substance. Here a portion of the vitreous just under the wound was quite serous, part was becoming condensed, and was apparently progressing to organisation. Here and there, disseminated throughout its substance, were some small circumscribed abscesses, and in one of these we found the portion of copper—the part around it having a greenish hue. The choroid was separated for a certain distance round the wound, and some blood was extravasated between the tunics.

As to the efforts to remove foreign bodies from the vitreous, we are inclined to agree with Dr. de Wecker that, had the operators published the final results of their efforts at extraction, allowing an interval of two or three years to pass away, the temptation to imitate such attempts would be diminished considerably. At the same time we cannot deny to some the brilliant results which have followed the ingenious application of the properties of the magnet. Dr. M'Keown, of Belfast, some five years since, published a case of this kind. Lately in a paper on this subject in *The British Medical Journal* (February 14), Dr. Wolfe figures Professor Herschberg's apparatus for attracting foreign bodies, in which, by means of galvanism, the power is concentrated in the thin and curved extremity of the instrument—thus making it easy of introduction.

Lectures XXXIV. to XXXVIII. are devoted to the considera-

tion of retinal diseases; XXXVIII. to XL. to the diseases of the optic nerve. It would be impossible to attempt more than a mere allusion to a few of the many important matters dealt with; and here we are at once brought to the border-land of that which is strictly ophthalmological, and which encroaches on those states generally regarded as belonging to the domain of general medicine. Hughlings-Jackson, Gowers, and Clifford Allbutt have proved how the accurate study and correct appreciation of various morbid states in other organs is elucidated by the ophthalmoscope, and by the ophthalmological appearances which it reveals. Many times it has been our duty to give a timely warning to patients from the appearances recognised by the ophthalmoscope, and where our attention was directed to the heart, kidneys, brain, or liver by the ophthalmological phenomena present. It cannot be too urgently insisted that the ophthalmoscope is as great a power in general as it is in special medicine. Yet, as the author says, "up to the present this has been a *pium desideratum* and nothing more." Nor is this to be wondered at as long as the present system of medical education continues, and the teaching of ophthalmic medicine and surgery is regarded by the various licensing bodies and the general medical council as a secondary consideration—not even worth a three months' course of lectures, or clinical instruction, in some special department or hospital. It is no exaggeration to assert that three-fourths of the students qualifying regard the ophthalmoscope as an instrument made only for specialists, and the use of which they look on as quite superfluous, and, to an extent, as useless in ordinary practice. Nothing could be more convincing than the cases related by Dr. de Wecker in referring to retinal hæmorrhages. It is well known how frequently such extravasations are due to secondary heart mischief which has its source in vascular changes due to morbid blood states—as, for instance, in Bright's disease. Most important are such ocular disturbances in pregnancy. This is obvious when we remember the effect produced on the blood by this state and the relative importance which it has to the safety of the patient—both as an indication of head complications and other hæmorrhagic discharges, either before or during labour:—

"I was requested some five years ago to examine a young American lady, twenty years of age, who was in her seventh month of pregnancy, and who complained that her sight had been somewhat dim during the last few days. Her husband begged of me to examine her that very

evening, although to do this I had to disturb a large dinner party, which neither the condition of her sight nor health prevented her taking part in. I found that there was a very slight haziness of the retina in the neighbourhood of the papilla in both eyes, and deferred further examination till the next day. At ten o'clock the following morning the ophthalmoscope showed on the left, near the papilla, a small extravasation, which certainly could not have escaped my investigation of the previous evening. Meeting a colleague, in consultation, I informed him of the fresh hæmorrhage in the left eye and the increased haziness of the papilla, and begged him to allow premature labour to be brought on. I felt convinced that it would not be long before serious brain symptoms would declare themselves, and that in any case this primipara would not arrive at her full time without some accident. One of the most celebrated accoucheurs in Paris was called in in further consultation, but I was unable to convince him of the urgency of this danger. During the night which followed this consultation—that is to say, four days after the first ophthalmic examination—the patient was seized with convulsions, following each other in rapid succession. In all haste Dr. Campbell was sent for, but he did not feel justified in forcibly delivering a patient who lay unconscious and in a moribund condition. Death occurred the following night.”

He cites a second case in which a renal cyst passed undetected where retinal apoplexy was present.

As regards the percentage of retinal complications in Bright's disease: “According to the most reliable statistics,” Dr. de Wecker says, “retinitis occurs in from nine to twenty per cent.; less accurate give, out of 150 cases of kidney disease, fifty of retinal.”

Not long since a patient came a long distance to consult me for failing vision in both eyes. On examination well-marked Bright's patches were seen on the retina in one eye, and the characteristic scattered dots in the other. On examining the urine we found its sp. gr. 1,008, no albumen present, but there were renal casts and epithelium; the other symptoms pointed to the presence of granular kidney, which up to this had been unsuspected. Not in this case only has it been our lot “to be the first to discover—by the ophthalmoscope—the danger that threatened the patient,” and we feel assured that were the use and knowledge of this instrument generally insisted on, many diseases would be more frequently recognised in their earlier stages and a timely warning given both to physician and patient. In noticing the author's allusion to the contra-indication of hot baths in retinal lesions dependent upon nephritis, we are reminded of two cases of sudden death occurring

in our own experience from the congestion produced in this manner. The last instance was that of a lady who noticed her vision affected for a few days, and called on us to have an examination made with the ophthalmoscope. We happened to be absent. She left word that she would come the next day. That night she took a hot bath, which she had frequently taken before, was attacked while in the bath, and died in a few hours of apoplexy. An ophthalmoscopic examination that day might have saved her life. But we could multiply instances in which both the detection and diagnosis of existing disease has been due to the ophthalmoscope. "The retinitis of malignant anæmia is so constant," says the author, "that it may be looked on as pathognomonic."

Not long since we had a case of well-marked diabetic retinitis of both eyes under our care; in each there was a hæmorrhagic effusion. The vital importance of the early recognition of retinal sclerosis, ending in retinitis pigmentosa, is hardly sufficiently understood—a slight complaint of hemeralopia being the only indication in a large number of cases. When we contemplate the termination of this affection in complete blindness of a hopeless character, this exercise of caution in giving a prognosis, and of care in the treatment, is obvious—the more so when we remember how slight are the retinal deviations in the earlier stages. Its occurrence in males more frequently than in females, and its congenital or hereditary character, is insisted on by Dr. de Wecker, and, more important still, its relation to arrest of muscular development and paralysis. He speaks highly of the subcutaneous injection of strychnia (5 or 10 drops of one per-cent. solution), "the greatest caution being taken in the case of young children;" he uses the continuous current at the same time. The author regards "attraction and repulsion as the two chief factors in the production of detachment of the retina"—the detachment may be gradual or sudden. Tightening and contraction of filamentous opacities (H. Müller) would draw on the retina, or a layer of fluid may exist between the hyaline membrane and retina. Laceration of the latter may permit of the passage of this fluid behind it or between it and the choroid. Adhesion of the retina with the hyaline membrane, when the latter is detached, will act on the former, detaching it, and sub-retinal serous fluid will collect between the retina and choroid. He quotes the opinion of M. Raehlmann, which is founded on the production of artificial detachment of the retina by exosmose. Salt was injected into the vitreous, and the retina became detached. He

supposes an excess of saline element in the vitreous, and in consequence there is created a current through the retina of the serum of the blood contained in the choroidal vessels. As the albumen would be arrested in its passage through the retina, it would accumulate behind this tunic, which would thus become detached in proportion "to the amount of serum required to dilute the vitreous humour." Tumours and traumatic causes likewise bring about detachment. Spontaneous reapplication of the retina the author has seen in one case.

Of idiopathic detachment, without any cause, we have seen many examples. Frequently it occurs only in one eye. Such a case we saw lately, in which a large detachment was present, occurring in a woman otherwise healthy, and nothing abnormal in the other eye. Not long since, also, we had an interesting case of double detachment in a gentleman in robust health. There was no hepatic, renal, heart, or brain trouble. He was myopic, but not so to any great extent. Here there was no traceable cause; vision was diplopic. The separation occurred suddenly in one eye, and followed, after a certain lapse of time, as suddenly in the other. When I last saw him there was a decided improvement in the vision of the eye first attacked. The degree of vision persisting in these cases, so long as the fovea and papilla are not involved, is wonderful. Dr. de Wecker reviews the different attempts which have been made from time to time to treat detachment of the retina surgically:—

"At the present time," he states, "I once again have fallen back on puncture, but have modified it as follows:—I use a narrow sclerotome, two millimetres in width, which I pass as peripherally as possible between the external and inferior recti muscles, close to the equator of the eye. If the position of the detachment is such as to necessitate it, I pass in my sclerotome between the internal and inferior recti. This should penetrate not more than four or five millimetres, or, in fact, as short a distance as possible, and then be rotated in about a quarter of a circle. The fluid flows out generally at the moment the sclerotome is withdrawn, and forms a small swelling."

Eserine, a compress bandage, the careful inunction of mercurial ointment, with the occasional use of salines, is the subsequent treatment. The patient is kept in bed from eight to thirty days.

The chapters on diseases of the optic nerve are replete with new and interesting matter. The differentiation of the various forms of neuritis, the etiology of ischæmia, the diagnosis of cerebral

complication, tumours and compression, papillo-retinitis in connexion with tubercular meningitis in children, are dealt with in Chapter XXXIX. The terrible rapidity with which retro-bulbous retinitis occurs, preceding ischæmia of the papilla, and often of the macula, causing instant blindness, invests this affection with a peculiar interest. One of the most remarkable cases of instant blindness, occurring from this cause, coming under our observation, occurred in the person of a lady who some years since consulted us. She suddenly received the information, by telegraph, of the suicide of her son. Immediately the sight of one eye was lost. She did not recover it. When I saw her there was a large atrophic patch, involving the entire region of the macula, with accompanying atrophy of the disc.

Glioma is a very rare affection with us. We have seen but a few examples. Some time since we removed a glaucomatous eyeball with a gliomatous tumour which involved the optic nerve at some distance from the eyeball. The nerve was divided far back. A few months subsequently the child returned with an enormous fungus filling the orbit. We removed the entire contents, including the periosteum. Notwithstanding this step, in about six months from the date of the operation, recurrence took place and death resulted. In our experience, dressing the empty orbit with chloride of zinc has little effect in preventing the recurrence of malignant disease. Dr. de Wecker advises the removal of the periosteum, but this step would prevent the use of chloride of zinc, increasing, as it does, the risk of necrosis. The secret of operation is—early enucleation and section of the nerve far removed from the globe.

In the chapter on diseases of the optic nerve, the author enters on an analysis of those cases in which the primary lesion is in the nervous centres. Following Leber, he seeks for the cause of the ocular trouble in (a) dropsy of the sheaths, (b) perineuritis, (c) interstitial neuritis, (d) medullary neuritis. The etiology of papillitis, and the consequent atrophy, and the consideration of the relation of ischæmia to intra-cranial tumours or hæmorrhages, also syphilitic gummata, &c., are discussed. The treatment by incision of the sheath of the optic when there is compression of the cerebrum is reviewed, and the steps of the operation as performed by Mr. Power and the author are detailed. But this portion of the work is replete with information for the general physician and surgeon. It is much to be regretted that the influence of tobacco and alcohol in producing

amblyopia and amaurosis is not more frequently kept in view. Though the author's experience is different, we have seen many times progressive atrophy of the disc as a result of tobacco and alcoholic abuses—more especially the latter. He remarks on the difficulties such patients have in discerning the colour gold:—
 “Under the Commune many of the National Guards came to consult me because the dome of the Invalides appeared to them to be covered with silver.” The time of the day in which the amblyopia is most marked, the fact of one or both eyes being affected, the rapidity with which the symptoms increase, appear to be influenced by the proportion in which tobacco or alcohol acts as a cause. For our part, we have no doubt that tobacco alone is sufficient to produce the change. *Total* relinquishment of tobacco, extreme moderation in the use of alcohol, the use of strychnia internally, alternately with santonine, smoked preservers, and relinquishment of near-work, with plenty of out-door exercise, afford us the most perfect means of treatment.

Various other rare causes of amblyopia are alluded to, as the effect of lead in dyes, the intoxication by quinine—an example of which we have elsewhere published, in which, though the amblyopia was only transitory, a troublesome tinnitus was permanent. The relation of ovarian irritation and hysterical amblyopia is of importance; the treatment of hysterical anæsthesia by M. Charcot by means of metallotherapy, and the astonishing results from this treatment are borne testimony to by Dr. de Wecker. Making all allowance for the statements of this class of patient, he says:—
 “There cannot be any doubt of the efficacy of metallotherapy. I could give you proof of the unquestionable influence of weak continuous currents produced by metal discs, the choice of which as to the metal is subordinate to some peculiar idiosyncrasy of the patient.”

The remaining chapters of the work are devoted to the consideration of affections of the muscles, orbit, and lachrymal passages, with disorders of refraction and accommodation. We might have wished that in a work of this character the latter most important branch of ophthalmology would have been more comprehensively dealt with. The therapeutics of refraction and accommodation requiring such close and accurate study might seem to demand a separate treatise. But inasmuch as the foundation of a correct understanding of “ocular therapeutics” must be laid side by side with a knowledge of the laws of refraction and accommodation,

and our means of correcting the many deviations from their natural action, no work on this subject can be regarded as complete which does not give of this department a careful survey.

Our notice of this work has been of necessity comparatively brief. We do not know that we have ever read a work on any subject with greater pleasure or more profit. It is a splendid *résumé* of modern ophthalmological science. It sheds still greater lustre on the name of its illustrious author, while it reflects the greatest credit on the able translator. The lucid style of description, the clear exposition of difficult points in pathology, the thoroughly practical manner in which rules of treatment are expressed, leave nothing to be desired. To our "special" brethren we can strongly recommend the work as essential in the literature of ophthalmic science, and the more general physician or surgeon will find in its pages ample evidence to satisfy him of the great value which a knowledge of ophthalmology must prove in the elucidation of many diseases which fall strictly under the province of both to treat.

H. MACNAUGHTON JONES.

Lectures on Syphilis of the Larynx. By W. MACNEILL WHISTLER, M.D., M.R.C.P.; Physician to the London Hospital for Diseases of the Throat and Chest. London: J. & A. Churchill. 1879. Pp. 84.

THIS book comprises two lectures delivered at the hospital to which Dr. Whistler is physician. It treats of the lesions of the secondary and intermediate stages of syphilis; those of the tertiary stage he omits from these lectures.

The lesions which come on during these earlier stages of syphilis he classes under four heads:—1. Catarrhal congestions simulating those arising from ordinary causes. 2. Congestions accompanied by *diffuse redness* and *swelling*. 3. Mucous patches of various types. 4. More chronic inflammations, occupying as it were the period of transition, the signs of which are—*diffuse redness*, *thickening*, and *ragged ulceration*, especially of the vocal cords.

The first kind has no distinguishing marks, and the diagnosis can be established only by associated manifestations of syphilis elsewhere. The second form differs from other catarrhs in the following points:—(1.) The redness is often more limited in its distribution, and it is not so bright; it is often rosy in the earlier stages, becoming darker in cases of longer standing; it is not vivid

unless accidentally inflamed. (2.) It is accompanied by general puffiness instead of great swelling. (3.) There are no very acute subjective symptoms. Yet even these points do not absolutely prove the catarrh to be specific—the diagnosis must be assisted by the general lesions, of which, the author points out, the most constant are the mucous patches of the mouth and pharynx. In discussing the third form, the author asks—“Do mucous patches, or condylomata of some others, occur in the larynx?” and then, having quoted a host of authorities, from M. Ferras, who only saw one in the course of his experience, to Mackenzie, who describes them as “the most characterised condition,” he assures us that his own observations have thoroughly convinced him that this manifestation of syphilis has its place in the larynx as elsewhere. He has met mucous patches in the larynx in more than one out of every four cases of secondary syphilis, but never in the intermediate or tertiary stages. The rest of this long lecture is occupied with a history of nine cases, each of which is detailed at tedious length.

The second lecture is devoted entirely to the consideration of the fourth variety of lesions, the peculiarities of which are—*diffuse redness, thickening, and ragged ulceration*. It may be the immediate outcome of the catarrhs and mucous patches of the other varieties, or it may show itself three or four, or more years after the primary sore. This variety is more chronic than the other forms, and in it relapses are more common, so that this specific “relapsing ulcerative laryngitis” may extend over several months, and sometimes over a year or two, with slow changes in the larynx. In dealing with treatment, the author lays stress on the importance of combining both local and constitutional measures. Of course, among the latter, mercury is given the first place; and the suggestions offered, if not new, are sound and practical as to the best means of bringing the patient under the influence of the drug, always bearing in mind that salivation is especially undesirable in syphilis of the throat on account of the local irritation it there produces. He reviews at some length the method of hypodermic injections of corrosive sublimate, introduced in 1865 by Lewin of Berlin. From its rapid action it is specially suited to certain grave affections, and, among them, to laryngitis threatening suffocation. The author has not been very successful with it, and therefore does not hold it in much esteem. On the whole, the cream of these two lectures is to be found in these last fifteen pages dealing with treatment, and many useful suggestions are there to be found. The first lecture, though

containing much information, is spun out to a dreary length, and we can hardly imagine how the patience of the audience could have sustained it whilst wading through the cases with which it wound up. The second lecture is happier, and contains much that is worthy of perusal. We can recommend it to those who take an interest in the subject.

Observations on Fatty Heart, comprising Remarks on the Morbid Anatomy, Symptoms, and Diagnosis, Prognosis, Etiology, and Treatment. An Essay, by HENRY KENNEDY, A.B., M.B., Univ. Dubl., &c., &c. Dublin: Fannin & Co. 1880. 8vo. Pp. 171.

IN reading this essay, with a sincere desire to get information on the subject of "fatty heart," we felt more and more disappointed as the author seemed to touch on many subjects at the expense of the one which gives its title to the book. Thus, we found general paralysis of the insane (pp. 100, 117, 170), pernicious anæmia (pp. 99, 170), spinal arachnitis (p. 70), all more or less irrelevantly introduced. This is explained almost at the last page (p. 168) by the author himself, thus:—"From the extent of the subject I find I have written more of what might be called *dissecta membra* than an essay. The reader of the foregoing pages will have observed that the leading idea through the whole of them has been to show the widespread character of fatty disease, and that in future no single organ is to be considered to the exclusion of the rest; and so with this essay, which, though entitled 'Observations on Fatty Heart,' I would wish to be understood as—in one point of view, at least—including the entire frame."

We fail to find in this essay any distinction made between what is universally acknowledged to be physiological fat as opposed to pathological fat. The author, contrary to almost every other opinion, holds that fatty growth on the heart, without muscular degeneration, is a diseased condition, and tells us how he diagnoses it (p. 39). The terms osseous, ossific, and ossification are invariably used where calcareous would be the more correct adjective. Authorities are too often either not quoted further than by name, or are vaguely referred to. It is not easy to understand what is meant by a person *kitchening the breath* (p. 57), and it would have been more satisfactory to have given a few tracings of the pulse

the author thinks a "characteristic and common" one, and which he calls *sedate* (p. 86).

There is no index to the book. Chapter V.—"On the Treatment of Fatty Heart"—shows that the learned author is no anti-mercurialist. It may be thought we have read the essay hypercritically, but this is not so; and the author, for whom we entertain a lively personal regard, will readily believe that it has caused us considerable pain to write even these few words in dispraise of his work. He is so true a gentleman that he will accept our assurance that we have written solely in accordance with what we consider the conscientious discharge of our duty as reviewers.

It affords us much pleasure to state that we have failed to discover a single typographical error throughout the book. The manner in which it is brought out is most creditable to the publishers.

Clinical Lectures and Essays. By SIR JAMES PAGET, Bart., M.D., F.R.S. Edited by HOWARD MARSH. Second Edition. London: Longmans. 1879.

A FEW years ago we directed attention to the first edition of this work, which is made up of a variety of lectures delivered at different times, and of some essays published in the journals. The charm of style, and the philosophic treatment of the several subjects, many of them quite novel, secured for the book a most cordial reception from the profession. We are very glad to welcome a second edition, much enlarged, with new notes by the editor, and a copious index, in which the first edition was deficient. M. Petit has made a French translation, and since then M. Verneuil, taking the key-note from Sir James Paget, has led the way in his own country in a series of observations upon the influence of operations and injuries upon the various diatheses and the organs of the body.

In our previous notice we alluded to most of the subjects discussed in this volume; and we find that some interesting observations have now been added upon gout and upon the sequels of typhoid fever. Gout, in its surgical relations, does not hold as prominent a place in general considerations as the author here assigns to it. But, myriad-formed as it is, there can be no doubt that it does come in to mar our treatment in many cases, just as syphilis does. There are numbers of people of the "combustible"

sort, as they are called, who live in a beautifully balanced comfort; but let them get a bruise or a twist of some part, and almost forthwith there comes the explosion. Thus, in a person who broke his forearm, the gouty attack occurred within five minutes; and a patient suffered a sharp attack after each of three operations which he had undergone.

The tendency of chronic rheumatic arthritis as well as of true gout to follow injuries of joints in elderly people, was forcibly taught by the late Professor R. W. Smith and Mr. Robert Adams. Paget gives a most useful warning on the same point, observing that this chronic inflammation may spoil the joint, and give rise to such shortening and eversion of the limb as may simulate the effects of fracture of the neck of the femur. "Twice have I known such cases made subjects of legal actions against good surgeons, whom bad attorneys tried to make liable for negligence." A warning against the use of arnica liniments in such cases is worth remembering. In the gouty "it very commonly produces what is called erysipelas, or severe inflammation of the skin, often with vesication, always with intense heat and pain or burning, often spreading far beyond the part to which the arnica was applied, and in this way much more troublesome than the injury it was meant to cure." A case of this kind is within our own knowledge. A gentleman suffering from an injury which became the subject of legal proceedings, used arnica to a bruised part; he was gouty, and the erysipelatous appearances soon occurred. The medical opinion was divided as to the real nature of the affection, but the absence of constitutional symptoms very definitely pointed to its character.

The problem of gleet and its causes and cure gives occasion for some suggestions which are valuable, but we think a great many will withhold approval of some of the conclusions which Sir J. Paget has arrived at when he says:—

"When gonorrhœa is prolonged into gleet it is seldom because of any merely local condition. There may be stricture with an abiding unhealthy state of the lining membrane, or the urethra may be too often irritated by sexual excitement, but more often I believe that recovery is hindered by gout, or scrofula, or syphilis, or some other constitutional error or defect. The maintenance of gleet in connexion with gout and other constitutional diseases is the more important because of the tendency to the production of stricture which is associated with them, and which, but for them, would be, I believe, a very rare consequence of gonorrhœa. In gouty persons the production of fibroid tissue thickening and con-

tracting the outer layer of the urethral wall, and thus producing stricture, seems to be a process of the same kind as the thickening and contraction of the palmar fascia, or it may be more nearly compared with that very troublesome and generally gouty thickening and hardening of portions of the fibrous sheath of the corpus cavernosum, which produces distortion of the penis in erection and sometimes frightens with fright of cancer."

Of the other papers we specially recommend perusal of "Notes for the Study of some Constitutional Diseases," "Senile Scrofula," and "Nervous Mimicry." They contain many observations of the greatest possible value, but beyond this they will serve to suggest to the reader how much real addition may be made to medical knowledge by the collection of what may at first appear to be odd and unimportant points, but which in the aggregate give rise to new or larger views of many subjects.

Practical Surgery, including Surgical Dressings, Bandaging, Ligations, and Amputations. By J. EWING MEARS, M.D. Philadelphia : Lindsay and Blakiston.

DR. MEARS adds another to the numerous books of this class already published. Embracing so many subjects in 274 pages, one does not expect to find much fulness of detail; but altogether the descriptions do not suffer much in consequence. The chapter on Amputations is good, and sufficient for all practical purposes. Most of the special operations of this kind are well described.

Clinical Remarks on Gleet. By J. C. OGILVIE WILE, M.D.; Surgeon to the Aberdeen Royal Infirmary. London: J. & A. Churchill.

THIS pamphlet is confessedly a compilation of the views held by some modern authorities on the subject of gleet. As such, it will be found very useful for those who have sometimes to deal with this most troublesome class of cases.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART III.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE
COLLEGE OF PHYSICIANS.

SESSION 1879-80.

HENRY H. HEAD, M.D., President.

GEORGE F. DUFFEY, M.D., Honorary Secretary.

Wednesday, March 3, 1880.

DR. LITTLE in the Chair.

Case of Fatty Heart, with recent specimen.

DR. HENRY KENNEDY read a paper on a "Case of Fatty Heart, with exhibition of recent specimen." [It will be found at p. 293].

In reply to a query from MR. F. T. PORTER,

DR. KENNEDY stated that no examination of the kidneys had been made, but that there was arcus senilis commencing at the upper part of the cornea. The patient was only forty years of age.

DR. MACSWINEY observed that in another work Dr. Kennedy had expressed himself strongly regarding the influence of the nerves in connexion with fatty heart. He now seemed to lean to the opinion that the origin of the disease was to be referred to some fatty degeneration of the par vagum. Was it his opinion that all examples of fatty degeneration of the heart might possibly have their origin in nervous lesions? If so, it would be contrary to the opinion he had previously supported that fatty overgrowth or deposit might be the forerunner of fatty degeneration. It was not easy to glean from Stokes's remarkable essay on the subject what view that great authority held as to the duality or unity of the lesion in fatty disease. He seemed to regard the external deposit of fat and the substitution of fatty for muscular fibre in so-called fatty degeneration as merely different stages of the same disease. He also thought that there was a basic systolic murmur in fatty degeneration of the heart. Dr. Kennedy in his work referred that basic murmur to fatty deposit, and not to interstitial degeneration. He said that what he heard was the muscular sound, but not the ordinary well-known bruit.

He (Dr. MacSwiney) wished to ask had this woman any symptom of Cheyne-Stokes's respiration?

The CHAIRMAN inquired whether there had been in Dr. Kennedy's case any vertiginous attacks or syncopal seizures on the patient assuming an erect posture. He (the Chairman) was surprised at the result of the microscopic examination, as the naked-eye appearance of the cardiac muscle would not suggest to him the existence of fatty change.

DR. HENRY KENNEDY said the heart he exhibited had got very much harder since it had been kept in methylated spirit for five weeks. It was quite soft in the first instance, and there was not the slightest doubt of its degeneration. He considered that a pulse of only 56 was slow under the circumstances; especially bearing in mind that the female pulse was on an average quicker by eight or ten beats than that of males. The woman lay in a horizontal position during the entire time that she was in hospital, and there was no opportunity for any attacks such as the Chairman mentioned to manifest themselves. He could not say whether or not she had Cheyne-Stokes's respiration. Taking the average male heart at nine ounces and the female at from three-quarters of an ounce to an ounce less, he thought that a heart of only $6\frac{3}{4}$ ounces was considerably under the average. He attributed a great deal in the production of this disease to nervous influences. A good many authors had adopted the same idea, but none had put it forward more strongly than himself. In the case of a heart hypertrophied by from three to six inches of fat, he would not think that the nervous system had had anything to do with it. But the fat was an incubus on the heart, and there was no doubt that that stage had a tendency to go on to degeneration. From the amount of uneasiness and pain that existed in the case he had brought forward he was more inclined to set down the cause in that instance, not to malnutrition, but to some low form of inflammation attacking the nerves. Anyone who had read the work of Dr. Weir Mitchell was aware what an effect nervous influences exerted upon the muscles. They threw a flood of light on numbers of diseases that arose from injuries, showing that atrophy, changes in the muscular structure, wasting, curious rashes, and peculiar states of the skin, all arose directly from nervous injuries. They had not the same amount of evidence in medical cases, but they had enough to show that where the nerves got diseased they led to such forms of disease as Weir Mitchell had so admirably described. He thought that nervous influences had more to say to fatty degeneration than any other cause he could think of.

Iodic Purpura.

DR. DUFFEY read a paper on "Iodic Purpura." [It will be found at p. 273].

The CHAIRMAN said the Society was greatly indebted to Dr. Duffey

for his most exhaustive paper, which presented a complete *résumé* of the whole literature of the subject.

DR. WALTER SMITH said it was most important to be able to diagnose medicinal rashes. He knew of two cases of persons who were sent into hospital for measles, but it turned out that what they were suffering from was copaibal rash. Another patient that he knew of thought she was getting scarlatina, but had only taken quinine. So that mistaken opinions might be arrived at from ignorance of the fact that iodide of potassium caused this curious purpuric rash. Last December a woman, aged thirty-nine, became an extern patient at the Adelaide Hospital for ulcers of the left knee, which were probably syphilitic. He gave her iodide of potassium two or three times a day. Next morning her legs were mottled with a red rash, but it was limited to her legs, and scarcely appeared above her knees. The rash persisted as long as she took the medicine, but if the latter were omitted for a day or two the rash disappeared. The same rash had come out a year previously on her getting the same medicine. Her skin was naturally fair, and not subject to any other cutaneous eruption. He then ordered her five grains of iodide of ammonium, and the day after she took it a purpuric mottling came out chiefly on the middle third of her legs, but without any pain or irritation. It disappeared as soon as she stopped the medicine. If she took it in the morning the rash would be out in the middle of the day, or if she took the medicine in the middle of the day the rash would be out at night. He then tried a combination of iodide of potassium and aromatic spirits of ammonia, in consequence of the statement of Sir James Paget that the latter neutralised the rash-producing effects of the iodide of potassium; but he lost sight of the woman, and consequently had no opportunity of observing its effects. They should be very slow, however, to connect a particular eruption with any particular drug, unless the former always came out when the latter was used. Mere chance eruptions were not of the slightest value, for they might not be anything more than a coincidence. But if the same drug always brought out the same effect on the same patient, they were then entitled to connect them as cause and effect. There was a possibility of mistake in syphilitic patients and others exhausted by cachectic affections. It was remarkable that the iodide of potassium rash came out so soon, whereas the bromide eruption did not come out until after the patient had been subjected to the influence of the drug for a considerable time. He was very sceptical as to over-neat chemical explanations of the actions of simple compounds. The theory of Binz was by no means proved, and there were radical objections to connecting it with the explanation of particular morbid effects. The chemical hypothesis was intended to apply to every patient, whereas the purpuric rash only occurred in an infinitesimal number of the patients that took the drug. Therefore, a hypothesis suited for what happened

to everybody threw no light on phenomena that happened but rarely. He thought it possible that the effects of the drug were to be explained by the irritability of particular constitutions, and that they need not resort to fanciful chemical hypotheses for explanations of phenomena that occasionally occurred. He (Dr. Smith) had seen the eruption in Dr. Duffey's case, and there could be no doubt as to his diagnosis.

PROFESSOR TICHBORNE said that the equation given by Binz, as being the probable decomposition which occurred in the tissues when iodide of potassium was given internally, certainly would not take place in a test-tube, and the speaker ventured to predict that it would not take place in the human body. It seemed to be generally accepted that iodic purpura was due to a decomposition resulting in the production of free iodine, and it appeared probable to the speaker that the production of free iodine must be preceded by the dissociation of free hydriodic acid from the iodide. Once arrived at this stage, and there is no difficulty in conceiving a partial oxidation of hydriodic acid into iodic acid, when every molecule of iodic acid formed would eliminate six atoms of iodine according to the well-known reaction—



Iodic acid. Hydriodic acid. Water.

It was not generally known that even a solution of iodide of potassium cannot be kept any length of time without the production of a little iodate. Some time ago the speaker had had the honour of reading a paper before the Royal Irish Academy, in which he proved that the mere act of solution dissociated, to a limited extent, a salt into a free acid and free base, the free acid and base coexisting in the solution as a mechanical mixture, and not in chemical combination. The amount of this dissociation is subject to three or more influences, but is chiefly determined by the chemical force exerted between the two, molecules being counterbalanced by the dissociating influence of heat; so that the amount of dilution being the same, the percentage of dissociated acid would be determined by the temperature. Professor Tichborne, in these experiments, had been in the habit of using phenol-phtalein as an indicator, which gives colourless solutions with acids and neutral solutions, and red solutions with alkalies. The dissociation of salts can be evidenced by this indicator. The dissociated acids or bases are always set free in equivalent proportions, but whichever is the most chemically active produces its specific action on the indicator. Thus let us take the two salts, sulphate and sulphite of potassium—salts of the same molecular construction. In the first case we have the strong base, potassium, joined to the still stronger acid, sulphuric. Such a salt, when chemically pure, gives a solution which is colourless when phenol-phtalein is added. If a volumetric solution of potash is now added, we can measure the amount of dissociated acid, and when we have got an alkaline solution by this

means, the alkalinity is evidenced by the red colour of the solution. On raising the temperature a few degrees the colour instantly disappears. owing to the extra amount of acid dissociated at the more elevated temperature, the solution at the same time recovering its colour on cooling down to the normal temperature. If we repeat this experiment with pure sulphite of potassium, however, we shall find the results exactly reversed, because we are then dealing with a weak acid, sulphurous, combined with an energetic base like potassium. Sulphite of potassium gives a coloured solution, and, if rendered colourless by sulphurous acid, it becomes coloured again on raising the temperature. A few days ago Dr. Duffey had put a question to him (Professor Tichborne) as regards the relative decomposition of the alkaline iodides. He, consequently, determined to submit those salts to an examination similar to the experiments mentioned above. Time had not permitted him to compare notes with Dr. Duffey, but on listening to his paper that evening he had been struck with the remarkable coincidence of his (the speaker's) results with Dr. Duffey's experience of the therapeutical action of those drugs, which to his view gave undoubted evidence that iodic purpura was entirely due to a decomposition of the salt in the animal economy, and that its power in that respect was directly in ratio to the decomposibility of the salt. In the case of the alkaline iodides, the atomic weight gave no clue to the relative power of producing iodic purpura. Thus the relative decomposibility does not run in the order of their atomic weight, but exactly in the order determined by therapeutical experiments. Thus—

	Equivalent in each case containing the same amount of I—viz., one equi- valent, 127.	Relative decomposi- bility determined by a volumetric solution of $\frac{\text{NaHO}}{100}$	Per cent. of HI set free on raising 0·1 of an equi- valent 80 deg. C. thermometer.
Potassium iodide -	- 166	4	0·6
Sodium iodide -	- 150	2·5	0·37
Ammonium iodide -	- 145	133	15·74

As the amount of iodine, therefore, present per dose is much less in the potassium salt than it is in the sodium salt, at first sight it would appear that it should produce iodic poisoning in a much less degree than the sodium salt, but we see that the sodium salt is double as stable as regards its molecular construction, and of all the three iodides under similar decomposing influences will produce less hydriodic acid. The extraordinary decomposibility of the ammonium salt is probably accounted for by the volatility of its base. The marked analogy of the potassium and ammonium salts, and which analogy is not shared by the sodium salts, is frequently exhibited in their different compounds—*e.g.*, the readiness with which potassium and ammonium form alums, and the difficulty in forming the sodium alums.

DR. BARTON said he had been aware for some years that a purpuric

eruption followed the introduction of iodide of potassium into the systems of some persons, though examples of it were rarely seen. He would mention a few details of a case, in illustration of the exceedingly accurate and graphic description of Dr. Duffey. A gentleman, aged thirty-five, became the subject of a paralytic affection, and, after consultation with Sir Dominic Corrigan, he placed him on iodide of potassium. After he had been taking it for three weeks or a month, an exceedingly well-marked purpuric eruption broke out on his lower extremities, extending from the ankles above the dorsum of the foot, up the anterior surfaces of the legs, passing the knee-joints, and then extending up the thighs. He had no constitutional sensations of any description. He (Dr. Barton) did not immediately recognise the cause of the eruption, but after a few days stopped the medicine, upon which the eruption disappeared. Subsequently, in consequence of some other symptoms, the patient was again given the drug, and after a few days the same eruption appeared, but much more quickly than before. Afterwards, whenever he got the drug, the same eruption appeared, and always over the same region. Could Dr. Duffey say whether or not the majority of the cases he had brought forward were syphilitic patients? It was well known that iodide of potassium acted in a different manner upon syphilitic subjects from that in which it did upon others. He had been strengthened in diagnosis of syphilitic cases when he found the symptoms yield to iodide of potassium. Large doses were given to such patients for months without the production of any rash whatever.

DR. J. W. MOORE said that within the last few weeks two cases came under his notice in which certain symptoms were probably to be explained by the supposition of iodic poisoning. Three years ago he saw a lady's maid who had symptoms of incipient pulmonary consumption, and she was directed to paint a portion of the front of her chest with croton pigment, five-eighths of which consisted of the tincture of iodine of the pharmacopœia. She had used that paint at intervals up to the present time. She passed from under his observation to the country, and about a year ago suddenly began to suffer from extreme delicacy of the throat. Tonsillitis frequently occurred, and tonsillar abscesses formed on four occasions. He was called to see her a few days ago, and found universal hyperæmia of the fauces and pharynx. He heard that, in addition to using the croton paint, she had been painting the other side of her chest with tincture of iodine, and that the last medical adviser she saw had ordered the entire of the fauces to be brushed over with diluted tincture of iodine. He (Dr. Moore) stopped the iodine applications, with good results, so far as the state of the throat was concerned. The second case was that of a lady who suffered from spinal irritation, depending apparently on menorrhagia, with resulting anæmia. She derived great benefit from occasional applications, either of an ordinary blister or of

vesicating collodion over different parts of the spine. She became apparently well, but in December last, after an accident, there was a return of the spinal irritation. Instead of the blistering, to which she had previously objected, he ordered an application of the croton paint; and, after a couple of applications of it, she one morning found her face and neck covered with a measly and urticarious eruption. She was alarmed, and sent for a neighbouring physician, who believed she was suffering from Rôtheln. The eruption passed away, and she became quite well. After a week or ten days she again applied the iodic paint, and the rash reappeared. That occurred on four several occasions. It was interesting to note that both those patients were delicate females, whom they might look on as likely to be susceptible to the influence of drugs.

The CHAIRMAN observed that, as the discussion had drifted somewhat from the immediate point of Dr. Duffey's paper, which was that purpuric eruptions were sometimes produced by iodide of potassium, he desired to make a few observations on the general question of the disagreement of iodide of potassium with particular individuals. According to his experience the amount of the dose did not play any part in regulating the poisonous effects of the drug. He had seen its poisonous effects produced as frequently by very small doses as by large doses. As a general rule, when the medicine disagreed with a patient its effects were apparent after the first few doses. He gathered from Dr. Duffey's paper that in his case he discontinued the iodide of potassium as soon as the unpleasant symptoms appeared. In Dr. Barton's case the drug appeared to have been given for some time afterwards, and yet the symptoms subsided. He therefore thought that the drug should not be given up merely because injurious effects appeared during the first two or three days, as if it was persisted in the symptoms subsided. Since he (the Chairman) had learned that, with the object of preventing the unpleasant effects which sometimes followed the administration of the iodide of potassium in large doses, M. Fournier gave it in Bordeaux wine, he had had several opportunities of giving the medicine in light claret to patients with whom he apprehended that it would otherwise disagree, and he had found the results satisfactory.

DR. DUFFEY, in reply to the question put by Dr. Barton, said he could not answer it positively; but his impression was that, roughly speaking, about half of the patients on whom iodic purpura occurred had been syphilitic. The case which he had himself brought forward, however, was not syphilitic. Probably the reason why the effects he had referred to occurred in a large number of syphilitic patients was that it was in such cases iodide of potassium was chiefly given. As the application of tincture of iodine and of iodide of starch had been known to produce an urticarious eruption, it was not unreasonable to suppose that the eruption

described by Dr. Moore in the second case he mentioned was attributable to the iodine in the paint. No doubt in some cases the eruption caused by the iodide subsided even though the use of the drug was persisted in; but care should be taken how it was persisted in while the eruption was out, as one case had been reported in which the apparent result of doing so was cerebral hæmorrhage. The practice of administering the iodide in claret was not, he believed, an original idea of Fournier's. M. Laségue used to give it in the same way. Why this vehicle should have the effect attributed to it, he (Dr. Duffey) could not say. Possibly it might be due to the tannin contained in the wine, as it had been noticed that the addition of tannic acid to iodide of potassium prevented the unpleasant gastric symptoms the drug occasionally induced.*

The Society then adjourned.

ALTERATION OF CUTANEOUS NERVES IN A CASE OF VITILIGO.

THE alteration of nerve tubes in certain trophic affections of the skin has already been noticed—*e.g.*, in anæsthetic lepra and some forms of pemphigus; but MM. Leloir and Chabrier have just proved that similar alterations are observable in certain cases of vitiligo. The following is a *résumé* of their communication to the Institute of Medicine. The piece of skin that we have examined is taken from a large patch of vitiligo, seated on the lower part of the abdomen, of three years' standing. The nerve filaments adhering to the piece of skin were examined after remaining in 1 per cent. solution of ozonic acid twenty-four hours, and coloured with picro-carmin. By this means we could see that a large number of the nerve tubules were notably altered, and presented with great distinctness evidences of atrophic neuritis. In some the axis cylinder had completely disappeared, the gray matter was divided into globules, and had even in some parts completely disappeared; the nuclei had evidently multiplied, and the nerve tubes contained a yellowish substance. But the tubes thus altered were few in proportion to those that had undergone complete degeneration—total disappearance of the gray matter; empty tubes presenting a moniliform appearance (the covering of Schwann alone remaining, and displaying nuclei at intervals—the final state of degeneration of nerve tubes). These facts show that we have to do with a slow degenerative process. Besides these nerve lesions we could see that the epidermis was notably atrophied. On the surface the papillæ had entirely disappeared. There existed only the corneal layer, the stratum lucidum of Oehl, and in places the superficial Malpighian layers—the granular layer of Langerhaus being totally wanting.—

Revue Médicale.

S. W.

* *Stillé's Therapeutics and Materia Medica.* Third Edition, Vol. II., p. 768.

THE DUBLIN
SOCIETY FOR
MEDICAL
OBSERVATION.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL
SOCIETY.

FORTY-SECOND ANNUAL SESSION.

EDWARD B. SINCLAIR, A.M., M.D., President.

WILLIAM ROE, M.D., Honorary Secretary.

Saturday, February 7, 1880.

E. B. SINCLAIR, A.M., M.D., President, in the Chair.

The late Sir Dominic Corrigan.

The PRESIDENT.—I think it necessary to say one or two words relative to an event which has saddened us all. We have recently placed in the grave our old friend, Sir Dominic Corrigan. To him, I may say, we owe the existence of the college in which we meet to-night. Through his energy and perseverance the College of Physicians was removed from the position of being roomkeepers in Sir Patrick Dun's Hospital and placed in this magnificent hall. I am sure we all personally regard his memory as that of a dear friend. I will say nothing here of his professional eminence, which has been spoken of already, but I think it behoves this Society to pass a resolution of condolence with Lady Corrigan and the members of the deceased baronet's family.

The REV. PROF. HAUGHTON, F.R.S.—Although the late Sir Dominic Corrigan was not a member of this Society, it is well known, sir, that he felt the deepest interest in everything that related to the advancement of the profession generally, no matter what department of it was concerned, and we would discredit ourselves if we allowed the event of the death of one whom I may speak of as the last of the old Dublin physicians to pass without making an appropriate record of it on our minutes. Therefore, with the permission of the Society, I would propose the following resolution:—"That this Society desires to place on record their sense of the great loss the whole Medical Profession has sustained in the death of Sir Dominic J. Corrigan, Bart., and to convey to Lady Corrigan and her family their heartfelt sympathy with them in their great bereavement."

DR. MACSWINEY.—I beg to second the resolution which has been so ably proposed by Dr. Haughton. It had occurred to me that it would be extremely becoming on the part of this distinguished Society to join the other medical bodies in testifying their feeling with respect to the

great loss the whole profession has sustained. Sir Dominic Corrigan, although not a member of this Society, was an Irish physician and a member of the great historic body of Irish Medicine, and in that capacity his sympathies were with every one of the sections into which Medicine is necessarily subdivided. Consequently it was not alone for the Medical Society of the College of Physicians and the other bodies with whom he was identified to express their sentiments on the present occasion, but this Society, which ambitions to take a foremost position amongst the medical bodies of the country, should not remain behind hand on the occasion. As Dr. Haughton and yourself, sir, have refrained from entering upon the question of the eminent medical position of the deceased baronet, it will suffice for me to say that his name will for ever form a part of Irish medical history.

The resolution was put and carried unanimously.

Erythema Uterinum, or Roseola Uterina. By GEORGE H. KIDD, M.D., &c.

THE diseased condition I propose to bring under notice to-night, though trivial in itself, seems to me to possess features of clinical and pathological importance sufficient to warrant my inviting the attention of this learned Society to its consideration, and my attempting to give it a name and a place in a nosological scale. I have, therefore, headed my paper with the name erythema uterinum, or, to avoid the combination of a Greek and a Latin word, roseola uterina, erythema or roseola, because of the character of the eruption on the skin, and uterine as depending on the condition of the uterus.

Though the disease is not at all infrequent in its occurrence, it has never, so far as I can learn, been described in any of our books.* I have met with it most frequently in patients in childbed, but also after trivial operations on the uterus in women who have never been pregnant. I have seen it occur twice in consecutive labours in the same patient, and I am inclined to think this is not an exceptional case; and looking back, though I cannot produce the actual figures, I believe I am right in saying it has occurred in at least 3 per cent. of the midwifery cases I have attended, and very great anxiety it caused me when I first began to observe it, fearing it was scarlatina my patient was getting.

That it will be found to be of not infrequent occurrence when attention is directed to it seems not improbable from the following letter from Dr. Atthill, who, when I mentioned to him my intention to bring forward this paper, said he could not recollect having ever met with such a case,

* The author of the article in Ziemssen's Cyclop. of Medicine (Thomas) describes a scarlatino-erythematous dermatitis as occurring in puerperal women, which is, he says, quite distinct from true scarlatina; but the condition he describes does not correspond with the disease I am about to speak of.

and yet the very patient beside whom we were standing showed the eruption on the third day:—

“DEAR KIDD,—In consequence of the death of two near relatives, I cannot attend the meeting on Saturday; but perhaps it may interest you to know that the lady you assisted me to deliver on Sunday, the 7th, was on the third day covered with the rash you describe. There was a good deal of irritation, but no real fever. Lochia and secretion of milk normal.

“I am, yours,

“LONBE ATTILL.”

The history of it is this:—On the third, fourth, or fifth day after delivery attention is drawn to the condition of the skin of the abdomen by the patient's complaining of its being irritable and itchy, which she will probably attribute to the pressure of the binder; or the nurse will say that when applying the binder she has discovered an eruption like that of scarlatina. On making an examination, an eruption is found in broad patches over the abdomen, which in a few hours spreads over the whole of this region. In appearance it so closely resembles a mild scarlatina eruption that it could not in this respect be distinguished from it. Next day the axillæ will present a similar eruption, but perhaps paler in colour. This will extend over the chest and downwards till it meet that on the abdomen, and upwards covering the neck, but not affecting the face beyond deepening its natural colour. It will creep down the arms, and in many cases affect the hands, on the backs of which it will have a more dusky shade than elsewhere. At the same time it extends down the thighs and legs, and covers the back, but always extending in broad patches. During all this time there is no fever; the pulse and temperature are normal; the lochia and milk are unaffected; the patient takes her food as usual. There is neither headache nor redness, swelling nor inflammation of the tonsils. The eruption begins to disappear about the end of the second or beginning of the third day after its first appearance. The parts last affected begin to grow pale, and it soon disappears entirely, except from the abdomen, where it will remain in patches, it may be, for five or six days. The disappearance of the eruption is not followed by any desquamation of the cuticle, affection of the kidneys, or œdema of the extremities, nor does the patient's convalescence seem to be in any way retarded.

The foregoing is, as it were, a sketch of a typical case, but varieties occur. In one case the eruption was more marked on the back than on the front of the body, and the reddened surface had minute vesicles scattered, not very closely, over it. These vesicles were rather larger and flatter than those of the ordinary miliary eruption, and they dried up, forming minute scales, without becoming opaque or purulent. It may be worth mentioning that this patient was of a very marked hysterical temperament, and afterwards suffered from hysterical aphonia

and a hysterical condition of her knees. In another case the appearance of the eruption was preceded the night before by intense headache, with sick stomach, and the nurse thought she was slightly delirious through the night. When I visited her the following morning the headache and other symptoms had disappeared, and there were patches of eruption on the abdomen, but there was an utter absence of fever and constitutional disturbance. On investigation, it was found she was subject to attacks of megrim, or sick headache, and the occurrence of it at this time seemed to be merely a coincidence. In two instances I have seen this form of erythema very well marked after so trivial an operation as the slitting of the os for dysmenorrhœa.

The clinical interest of this eruption arises from the resemblance it has to scarlatina and the erythematous stage of smallpox, but the entire absence of fever and constitutional disturbance serves to distinguish it from either. One form of the erythema that often precedes the eruption of smallpox resembles it, somewhat, in the place in which it makes its appearance—that is, on the abdomen. Hebra describes it as follows:—“Quite at the beginning of the preliminary febrile symptoms of smallpox there is, in some cases, observed on the abdomen and on the inner sides of the thighs a rash, which is sometimes a mere hyperæmia, and disappears beneath the pressure of the finger, but which is, in other instances, of an hæmorrhagic nature, and then persists without change. This rash invariably remains confined to a space bounded above by an imaginary line drawn transversely across the umbilicus—at the sides by the lumbar regions, and below by a line traced across both thighs, about three fingers’ breadths above the knees. It also extends further outwards in the inguinal region than lower down towards the knees; so that when the thighs are pressed together the area occupied by the rash forms a triangle, with its apex directed downwards. Some two or three days after its appearance the true smallpox eruption begins.” About this time last year, when the epidemic of smallpox was at its height in Dublin, I was asked to see a lady who had been prematurely confined, and was supposed to have peritonitis, but I was able, from detecting this eruption, and from the concomitant symptoms, to say she was developing smallpox, of which disease she died within a week. The erythema I describe is not limited to so definite a space as the erythema variolosum of Hebra, and it begins on the lumbar or hypochondriac region rather than on the inguinal. Above all it is not accompanied by fever, as is the other.

It seems unnecessary to dwell here on the diagnosis of the other eruptions observed in the puerperal state—septic eruptions, the so-called malignant scarlatina, erysipelas, the erysipelatous tumours of Denman, the appearance of which he calls “a mortal sign,” or the varieties of the miliary eruption, with none of which could the erythema now described be confounded.

In the title of this paper the adjective "uterinum" is added to erythema to indicate that the eruption depends on the condition of the uterus, in the same way that the older writers speak of "chloasma uterinum" to show their belief that the brown spots, occurring on the skin during pregnancy, depend on the state of this organ.

In a very interesting lecture published in 1872, and of which a full abstract may be found in the *Med. Times and Gazette* for 4th January, 1873, Professor Hebra gives an account of some affections of the skin, occurring in pregnant and puerperal women, which he looks on as certainly dependent on the condition of the uterus; and in a paper on "Herpes Gestationis," in the *American Journal of Obstetrics* for February, 1874, Dr. Bulkley, of New York, quotes Hebra's paper, gives additional cases, and takes the same view. I am indebted to my friend Dr. Walter Smith for a reference to these and other papers on the same subject.

Hebra says his object is to draw attention to some affections of the general surface which are, for the most part, met with during the early months of pregnancy, and either disappear during the later months, prior to delivery, or only terminate during the puerperal period. He describes cases of acne, pruritus, eczema, erythema, urticaria, and pemphigus; also five cases of a pustular eruption hitherto undescribed, but from which four of the patients died. "It is of great interest," Hebra says, "to observe that the physiological changes in the uterus, which accompany the condition of pregnancy, give rise to similar diseased conditions of the general surface as are met with in various pathological conditions of the internal female organs." And, after enumerating various examples, he proceeds to say:—"We see, therefore, that there are manifold processes of disease, which, by their localisation in the sexual apparatus, call forth diseased conditions of the general surface which do not appear when the same processes affect other organs. It should," he says, "prove an object of interest for gynecologists to investigate the nature of this connexion between the skin and internal genital organs."

Following the same line, Dr. Bulkley relates a case in which a herpetic eruption appeared in two successive pregnancies in a patient under his care, and analyses the reports of nine other cases of nearly the same character related by Hebra and other authors. He adopts the view that these herpetic affections, as well as many other diseases of the skin met with in pregnancy, are of nerve origin. "The nerve origin," he says, "of many diseases of the skin has now passed beyond the region of conjecture; and although it would be out of place here to study the mode of production of the lesions, we may mention some of the results observed and their relation to each other." Dr. Woaks, he says, has collected numerous instances where injury or shock was associated with neuralgic symptoms and alterations, to varying degrees, in the skin supplied by the nerves implicated. Erythema, eczema, herpes, and ulceration were

observed thus connected; and herpes zoster being especially studied with reference to shock from the impression of cold, the conclusion was arrived at, he says, quoting Dr. Woaks' words from a paper in the *Journal of Cutaneous Medicine*, that, owing to the suspension of the regulating power, exercised mainly by the sympathetic nerves over a given artery, effusion of fluid takes place from its ultimate ramifications. These being distributed to the skin on the one hand, and to the texture of the sensory nerves on the other, the effusion so caused produces the herpetic rash in the former, and pain from mechanical pressure in the latter. Dr. Bulkley also refers to a paper in the *Journal of Cutaneous Medicine* by Handfield Jones, who, he says, recognises vasomotor paresis as a cause of many affections of the skin, and instances zona, pemphigus, hyperidrosis, urticaria, and hyperæmia as connected with and evidently dependent on weakened and relaxed nerve power. This neuro-pathology of some skin diseases is, Dr. Bulkley says, recognised by very many in text-books and elsewhere; and after alluding to the fact that the nerves of the uterus are enlarged during pregnancy, he says:—"Consequently we are not surprised to find cutaneous disorders, especially attributable to nerve paresis, occurring repeatedly during that state. As before stated, the simplest and most common derangement observed is simple pruritus, or irritation of the sensory nerves of the skin. When, now, there is still greater nerve irritation, paresis of the vasomotor nerves ensues, causing hyperæmia, and fluid is poured out in varying quantity, giving rise to urticaria, eczema, herpes, and pemphigus, according to its extent and to individual idiosyncrasy—the first being the least expressed form, and the last the greatest, of confined and limited exudation."

I have attempted by these rather extended quotations to show what Hebra says should be an object of interest to gynæcologists—"the true nature of the connexion between the skin and internal genital organs," and also to show that this neuro-pathology affords the most feasible explanation of the occurrence of this red eruption, extending often over the whole surface of the body, and sometimes having a vesicular eruption intermixed with it, and yet without fever or constitutional disturbance. The internal surface of the uterus after delivery has been compared by Cruveilhier to an open wound; the nerves supplying this great wound are enlarged; the long-continued irritation of these enlarged and exposed nerves exhausts the centres with which they are connected; and hence the vasomotor nerves proceeding from these centres are paralysed for the time being, the arteries controlled by them relax and admit an excessive quantity of blood to the capillaries of the skin—hence the redness or erythema. If the capillaries be so full that they cannot accommodate themselves to the pressure, they pour out serum, and hence vesicles occur. As soon as the irritation of the peripheral nerves ceases, the nerve centres recover their power, the arteries are again controlled, and the

erythema disappears, the whole process from beginning to end taking place without fever or constitutional disturbance.

The whole of this subject, of the connexion between the skin and the internal genital organs, is full of interest, and furnishes a fertile field for further investigation; but the skin is not the only organ whose relation to the organs of generation deserves investigation. Rokitansky has shown, as I have been reminded by my friend, Dr. Corley, that in many women a new layer of bone is deposited on the inner surface of the skull at each pregnancy. "Each new pregnancy tends to add, Professor Simon says, another lamina to this growth, and when several such layers have been formed, they are preserved (at least for a long time) distinct from each other by a sort of diploe, which intervenes between them; so that their aggregate might form a sort of tally of the woman's puerperal achievements, as the rings of wood in a tree indicate the age of its trunk." The cases collected by Hebra and Bulkley refer chiefly to the condition of the uterus during pregnancy. May we not refer to the ptyalism many patients suffer from during this state as another example of reflex action manifesting itself on other organs than the skin. The eruption I have now described occurs after gestation has been completed and the uterus has been emptied of its contents, and so is a step further on; but the reflex manifestations from the unimpregnated uterus are not by any means less remarkable. I have long had under my observation a lady who, from the age of puberty, when other girls begin to menstruate, suffered every fourth week from a herpetic eruption on her hands and feet, which extended half way up her forearms; sometimes bullæ, as large as a shilling, would form, and after a day or two begin to dry up without changing colour, and at the end of the week fell off in scales. Menstruation was not established till she was seventeen or eighteen, and has ever since been very irregular. To the present day, when she misses a period, the eruption comes. Sometimes she feels it beginning, and then menstruation commences, and the eruption at once disappears. She has married, and had three children, and when pregnant or nursing she has no eruption, but when she misses a period, when she ought to menstruate, the eruption still comes. Another patient, with dysmenorrhœa depending on a small os and uterine catarrh, got a herpetic eruption all over her back and shoulders at each period. She came into the Coombe Hospital and I slit the os, curing her of her dysmenorrhœa and catarrh, and so long as she was under observation she had no return of the eruption; but as she came from Kentucky for treatment, and returned there, I cannot tell whether the improvement was permanent. Mrs. W. came under my care on the 28th October, 1878. Married seven years; never pregnant; has always had dysmenorrhœa; menstruation profuse; pain begins several days before the discharge appears, and at the same time the breasts swell and become painful; has violent and almost unceasing sneezing fits for

one or two days before the menstrual discharge occurs, but at no other time. She had a copious catarrhal discharge from the uterus, the posterior lip was enlarged, the fundus retroflexed; the sound passed the os internum with difficulty. Here was dysmenorrhœa depending on endocervicitis and retroflexion of the fundus, with a considerable amount of ovarian irritation; by curing these the dysmenorrhœa has been entirely relieved, and the sneezing fits have altogether ceased. Was not the sneezing a reflex irritation from the diseased organs of generation? In the case of Mrs. D., who came under my care on the 16th January last, there was evidence of obstructive dysmenorrhœa, complicated for the last two years with ovarian irritation, and the right ovary is enlarged and painful. Every menstrual period is preceded by the appearance of aphthæ on the insides of the cheeks and on the tongue and gums. This occurs so regularly as to prove its connexion with the menstrual process, and, as the local disease has not yet yielded to treatment, the aphthæ still recur, greatly to the distress of the patient.

Sir James Paget, Dr. Marsh, Mr. Paley, Dr. Goodhart, and others, have recently directed attention to scarlatina as occurring frequently after operations. In Paget's and Marsh's cases the eruption has occurred chiefly after lithotomy, and in most of them it has evidently true scarlatina, but in some the history of scarlatina is not clear. Dr. Goodhart, the most recent writer on the subject, evidently entertains doubt as to some of his cases being of this nature, and it certainly appears to me probable that some of these surgical scarlatinas are really instances of reflex eruptions.

DR. M'CLINTOCK.—I have occasionally observed an appearance of rash, resembling roseola or erythema, on patients a few days after their confinement, but as it was not attended by any pyrexial symptoms worthy of notice, and did not involve any great extent of surface, I attached no importance to it. Dr. Kidd has carefully investigated this subject, and shown the connexion occasionally existing between this eruption and the puerperal state. The practical conclusion to be drawn from his paper is that an eruption of the kind may involve more or less of the trunk and extremities, but if unattended with fever need not excite alarm. On one occasion the eruption was sufficiently extensive to cause me some uneasiness. Dr. Walter Smith saw the case with me. The lady was confined of her first child in April, 1874. She was only seven hours ill. She got chloroform freely, but not ergot, and had no hæmorrhage. Milk was very abundantly secreted, and her breasts were distended upon the fifth day, when a copious eruption appeared on her trunk, arms, shoulders, and neck of an erythematous nature, with little papular elevations here and there. At first I thought she was getting measles, but Dr. Smith and I afterwards came to the conclusion that it was an example of

erythema papulatum. There was no rise of temperature or acceleration of pulse. The rash continued for two or three days, and then faded away, and she made a perfect recovery. She has had three children since, and on none of these occasions was there any return of rash. It does not appear from Dr. Kidd's researches that this rash has any peculiar or distinctive character. We know that in rheumatism an erythematous rash is a common thing, and has received the name of *roseola rheumatica* or *arthritica*. In cholera also a peculiar form of roseola is often present; and after the use of indigestible food nothing is more common than to see erythema or urticaria appearing on the skin. In amenorrhœa also it is not uncommon to see erythema present. Dr. Kidd is entitled to very great credit for tracing up the connexion between erythema and affections of the uterus.

DR. DENHAM.—It is very important that we should know this affection so as to distinguish it from other diseases. I believe that this erythema or roseola which Dr. Kidd describes is a thing which occurs from infancy almost until the last stage of existence. It is something the same as what we call red gum in infants. We also see it when children are teething, and very often after vaccination. It is very common amongst the symptoms which usher in smallpox. It resembles what we call nettle rash, which has been noticed as ensuing from such a variety of causes that it is very difficult to name it in connexion with any particular cause. I am aware of a case of the wife of a medical man who if she took oatmeal gruel after her confinement would be sure to have nettle rash. In other persons the eating of mushrooms or lobster salad would produce the same effects, and the use of balsam of copaiba has been known to induce a severe form of it. Within the last week I attended a lady in Clontarf on the third or fourth day after her confinement, and she told me she had an eruption on the abdomen and arms. On examining her I found that she had precisely the disease which Dr. Kidd has described. Her tongue was clean, her pulse quiet, and there was no interference with her rest—in fact, she required no treatment whatever.

THE REV. DR. HAUGHTON.—I would venture to remark that I feel greatly comforted by what Dr. Denham has said, which leads me to conclude, that in the medicine of the future, when we shall have to report at the nearest police station the exact form of disease which our patients get, the midwifery practitioners will not be likely to confound trifling eruptions of the kind described with more serious diseases. I speak of the "medicine of the future," for I do not think we shall live to see such regulations carried out.

DR. HENRY KENNEDY.—I confess I am inclined to attach to this affection more importance than Dr. M'Clintock and Dr. Denham have done. I have seen cases in Cork-street Hospital in which, four or five days after fever had commenced, a redness had appeared on the skin, and it was

very difficult to say what it was. It disappeared long before the time for ordinary spots. Cases occur in which it is by no means easy to say what is the nature of the rash. I have been asked about cases in which the question was whether it was scarlatina or not, and, fortunately, former experience enabled me to say what it was. The rash is more commonly of the nature of roseola than anything else. It could never be, in my experience, confounded with urticaria, to which Dr. Denham has alluded. There are no wheals, nor any elevation of the skin, or commonly any itching. In hospital I have seen the disease mistaken for scarlatina. The great difference appears to be that in the case of this rash the pulse is not accelerated, although sometimes there is a little fever. As a rule the eruption pervades the whole body, but I have seen it also in patches. Several years since I used to make a good many *post mortem* examinations, and I observed this rash sometimes in patches on the skin, but it was very hard to define its character; sometimes it was like erysipelas, and at other times like scarlatina. The red patches existed before death and were very much lessened after death. I frequently saw the signs of redness coming out of mucous passages at the nose and cheeks, and spreading from the vagina to the thighs. I am now speaking only of dead bodies.

DR. DOYLE.—Dr. Kidd states that in his cases the surface affected with erythema was irritable and itchy. I have known erythema to occur after the use of belladonna, and also an urticarious eruption to follow the local application of opium in ulcers of the leg. I have known a quarter of a grain of opium to produce that effect.

DR. MACSWINEY.—Obstetric practitioners are indebted to Dr. Kidd for his carefully prepared history of these eruptions. The great point of interest in the communication is the establishment of a connexion between the uterus and the eruption. We all know that there are numerous circumstances which produce cutaneous eruptions, including errors of diet and peculiar medicines. But here the fact appears to be clearly made out of a connexion between the genital apparatus and the skin, through the vasomotor system of nerves. I have been recently to see a lady in the early months of pregnancy, and who had gone through six or seven pregnancies, and she informed me that in every instance she had been able to say that she was pregnant from the appearance of a peculiar eruption between her shoulders.

The PRESIDENT.—I do not think there is anything marvellous in the skin sympathising with uterine irritation. I have not the least doubt that erythema occurring in connexion with delivery has been frequently mistaken for scarlatina, and this would account for the asserted cases of recovery from scarlatina in connexion with confinement; whereas we know very well that when scarlatina attacks a woman immediately after delivery it is nearly always fatal. Therefore I believe that a great

number of those asserted cases of recovery from scarlatina after delivery were in reality nothing more than cases of the occurrence of this peculiar rash, arising from sympathy between the uterus and the skin, which is easily accounted for, because the skin as a surface is continuous with the mucous membrane.

Abortion Forceps.

DR. ROE exhibited a forceps which he had made for him by Messrs. White of Sackville-street, and which he thought was an improvement on the instruments generally used for the removal of an ovum or placenta. The direction of the blades being indicated by the handle, the absence of teeth, and therefore less liability of conveying infection, and the position of the joint, which, being nearly an inch nearer to the handles, allows a much greater separation of the blades with less divarication of the handles, are the principal improvements claimed for it.

Case of Phantom Tumour simulating Pregnancy, which occurred in the Zoological Gardens. By the REV. DR. HAUGHTON.

YOUR Secretary asked me to bring forward a communication here, but it was not until the present winter that I was in a position to bring forward a case of a phantom tumour simulating pregnancy which occurred in one of the animals under my care in the Zoological Gardens, and which I thought would be worthy of the consideration of a body of physiologists such as I see here. Phantom tumour in connexion with hysteria is perfectly well known in the human species. Phantom tumour simulating pregnancy is a definite kind of it connected with the female mental condition. I have seen phantom tumours simulating dropsy and simulating ovarian tumours, but I do not speak of them—I speak of the more common case of phantom tumour simulating pregnancy amongst women, which every one here is more or less familiar with. And having found a well-defined case of phantom tumour simulating pregnancy in a lower animal, I thought that a careful study of it would clear the ground for the more philosophical study of what occurs amongst women, as all idea of the mental disturbance which enters so largely into our notion of the phenomenon when it occurs amongst women would be almost eliminated. A woman married to a man whose property is involved, she naturally has a child. We all know that in such cases, and have run through a course of the most experienced nurses and midwives, except that in none of them the fetal heart with the stethoscope has been carried away to a distance

suppositious heir has afterwards been brought in. But the case I have to describe has no romance connected with it. It was a transaction between a she-ass, a male zebra, and myself. I purchased some years ago at Antwerp a fine specimen of the rare variety of the zebra called the Burtchaell zebra. I may mention that the whole species of zebras are becoming extinct—the white and black zebra is almost so. The Burtchaell zebra, which is brown and black, is a very handsome animal, and is rarer than the black and white one. The father and mother of the animal I bought came from Africa, and bred in the Zoological Gardens of Antwerp, so that the young zebra was acclimatised, and I had reason to hope that he would prove healthy in Dublin. He has done so. I endeavoured to procure for him as a partner a female pony, but could not succeed in doing so, the prices of ponies having risen almost above that of a zebra. Under the circumstances I procured for him a healthy three-year-old virgin ass from the county Kildare. It was absolutely necessary to have a female ass that had not previously had intercourse with either a horse or a male ass, because it is well known amongst cattle breeders that the first intercourse gives a stamp to the subsequent offspring. Intercourse took place repeatedly between the two animals, and appeared complete. I may remark here that a mule—which is the cross between a male ass and a mare—is more easily produced than a jennet—which is the produce of a stallion horse and a female ass. The ass, like the horse, is a tropical animal, both having come from Central Asia and Arabia; and I may add, which is not so generally known, that it is a great mistake to suppose that the horse was introduced into America from Europe. It is true that when the Spaniards conquered Mexico, the inhabitants of the latter country were greatly alarmed at seeing men riding on horses. But Professor Marsh, of Yale College, who has recently made such extraordinary discoveries of fossil animals in North America, tells us how he heard a great German philosopher of Heidelberg describe the horse as not a native of America at all, but as having been introduced into that continent from Europe, but that he (Professor Marsh) himself has discovered by those fossils that, although within historic times the horse had disappeared from both North and South America, and was reintroduced there from Europe, the animal originally came from North America. It was then about the size of a fox, and afterwards grew to that of a sheep, and American palæontologists have traced the animal until it became the true horse. Then they ranged in large numbers across North and South America, and crossed Behring Straits into Asia and Europe, after which they died out in America. The original animal had five fingers and five toes. It is well known that in higher latitudes the female animals come more rarely into season than they do in warmer climates, because the season must be regulated, so that the young can have summer weather. But the mare

and female ass are tropical animals, and, therefore, even in their present acclimatised condition, come into season at intervals of five weeks and remain so for from ten to fourteen days. Therefore, in the present instance, we had no difficulty in deciding that the animal was in foal, although I did not trust to my own observation in the matter, but called in that of a skilled man, who was accustomed to the breeding of horses and asses. The period of gestation in both the horse and the ass is eleven months. After the first six weeks the ass in question seemed—to use the words of old Weller—to be “wisibly swellin’” before our eyes. “Just feel the foal inside her, sir,” said the man; but my imagination did not go so far as that. The eleven months expired. I had already discounted the result as a handsome zebra foal worth £50, but to my great disgust nothing came of it, and then I was informed that the ass had come into season again. We gave her the zebra again, and she swelled again, but at the end of the eleven months the result was precisely the same as before. Now, in this case, mental element is got rid of, because the ass had no object in deceiving the zebra. Dr. Macan came out one morning and tried to examine her with the stethoscope, but found that her hair put him out so much, that if there had been fifty foetal sounds inside her he could not have heard them. I should mention that on the first occasion it occurred to both the man in charge of her and myself that she might have aborted during the night and eaten the produce. We carefully examined the place, and found not the slightest trace of placenta or blood, or anything of the sort. Before giving her the zebra again I allowed three or four periods of five weeks to pass, so as to give her a rest of nearly four months. Then she became large again, apparently with a fresh pregnancy. On each disappearance of the swelling her abdomen returned to its normal size in one day.

DR. M'CLINTOCK.—Was percussion of the tumour tried? The ass has something like a menstruation every five weeks and continues in season for about ten days. In the human subject obstruction of the menses is sometimes attended with swelling of the abdomen. We know that brutes have far more intelligence and even feeling than they are usually credited with. A remarkably strong feeling accompanies sexual intercourse in animals, and I do not think it altogether impossible that something analogous to a psychological element may have operated in this instance.

DR. DENHAM.—A point of particular interest in the case is the cessation of the menstrual discharge in the animal for each period of eleven months. I remember a case of phantom tumour which occurred while I was Master of the Lying-in Hospital. The young girl who had it was not married. You could get your hand round it and move it about; but in one night a considerable quantity of flatus escaped from her, and the tumour

disappeared. She was so delighted that she got up and danced about the ward, but after a short time the tumour reappeared again.

DR. HENRY KENNEDY.—We have now chloroform as a means of diagnosing phantom tumours. I believe that it is not a very easy matter to produce pregnancy between two different animals such as those in question. Nature has set the difficulty in the way herself. It is quite possible that the feelings of the ass may have been in opposition to it. We know it is stated on the authority of the greatest obstetricians that if the human female does not enter into the act she will not conceive.

The REV. DR. HAUGHTON.—That is not so.

DR. MACSWINEY.—The investigations of Lord Spencer in England, and various observations made by other authorities, go to show that in the horse, the ass, the sheep, the cow, and some other animals, the period of utero-gestation varies within a limit of from forty to sixty days.

The PRESIDENT.—I never saw but one phantom tumour, as it was called, and that was in the case of a lady whom I was asked to see by an eminent man in this city. I may say that I am rather sceptical about phantom tumours. I believe that a woman might be puffed up with wind, but in the case to which I refer I examined the lady and found a tumour close to the umbilicus, which from its conformation looked exactly like pregnancy. I found that I could isolate it, and was thunder-struck when, on pressing it backwards, I found that I could nearly touch the spine; but as I did that two or three times I thought I felt a slight tap against my hand. I examined her carefully with a stethoscope, and heard a bruit, but no foetal heart. I came away without examining her nipples, or showing the slightest indication that I expected pregnancy. I was asked to see her again, and on using a stethoscope instantly heard a loud foetal heart. That was the end of the phantom tumour. But let me tell you something about vegetables which bears on the subject. I tried to cross a vegetable marrow with a cucumber by crossing the male blossom of the latter with the female of the former. The vegetable marrow increased in size and ripened magnificently, but on opening it I found the interior covered with a hard glassy membrane as smooth as possible, and not the slightest attempt at a seed. But there it was, large in the family-way. I knew a case of a lady who, after having been married for many years, suddenly thought in her old age that, like Sarah, she had become pregnant. She had “swelled visibly,” and began to make the baby-clothes. Her husband was a medical man, and repeatedly said—“Well, I ought to know something about this, and I’m blessed if I think you are that way.” She thought otherwise, and her friends were congratulating her, when suddenly it all ended in wind. I object to the term “phantom tumour.”

The REV. DR. HAUGHTON (in reply).—Dr. M’Clintock will remember the Greek word *storgé* (στοργή), meaning chiefly maternal instinct. The

ancients attributed to all animals a greater amount of *storgé* than they thought was possessed by woman in whom intelligence and reason replaced the instincts meant by that term. I have no doubt that the idea of being in foal may have been in the ass's mind, and may have influenced her physiological condition. The man in charge of her and myself both observed that her mammary glands were enlarged, and that at the last moment they went down along with the phantom tumour when the supposed pregnancy was over. In the case of a woman a temporary obstruction of menstruation might produce a swelling, but we never knew a woman to stop menstruating for nine months who did not produce a child at the end of that time. As soon as I am in possession of the requisite amount of information, I hope to read a paper before the Society on what I call the "sexual physiological constants" of animals, including ourselves. I believe the value of these constants to be very extraordinary, and to have been not yet recognised. With regard to Dr. MacSwiney's statement as to the variation in the periods of utero-gestation, I believe that that alleged variation rests on imperfect evidence. From careful observation of a variety of animals, including the carnivores, I believe that the physiological constants to which I refer are of great value. Until we brought the llama into the Zoological Gardens there used to be the greatest diversity of opinion as to the period of gestation of the llama. I had an opportunity of dissecting a llama that burst her uterus in the effort to produce young, and for the first time I saw the placenta of a llama, and to my astonishment observed that it was diffuse and undistinguishable from that of the horse or camel. Up to that time it had been believed that the llama was connected with the ruminant group of animals, and that it had a cotyledonous placenta like that of a cow. The difference between the placenta of the horse and the cow establishes a gulf between these two animals, and renders them further apart than man is from the monkey. Therefore, observations upon them cannot be lumped together. I made careful observations on ten or twelve pregnancies of the llama, and these gave me the period of gestation identical with the records of Italian breeders of camels and with those of our own breeders of horses. Up to about four years ago the statement of Aristotle, in his history of animals, that nothing was known about the period of gestation of the elephant, was repeated in every book on natural history, although Aristotle put it down as about eleven months, like that of the camel and the horse; but a friend of mine, who is in the medical service of the Assam branch of the East Indian army, told me that it was a great mistake to suppose that that period was not known. He mentioned that for ten years they had tried to breed elephants in the hope of rearing them up for sale, but had been obliged to give it up. They found that the elephants which had been caught wild and conquered by fire and force were impressed for the

remainder of their lives with a terror of man that they never lost, but that the young elephants that were bred up in a domesticated condition became quite dangerous after the fourth year, and would try to murder their keepers, even though they might previously have been brought up as pets. But the period of gestation of the female elephant was observed to be twenty-two months, which is exactly double that of the camel and horse, and is a remarkable numerical relation. We know that the elephant is a more ancient animal than either the horse or the camel. With regard to the period of gestation, it appears to vary somewhat in animals living in the domesticated state.

The PRESIDENT.—I have read that the variation sometimes amounts to a third of the whole period. You will find it in Montgomery's "Symptoms and Signs of Pregnancy."

The REV. DR. HAUGHTON.—With regard to the large and small cats, all I can say is that from the Bengal tiger and the Babylonian and the African lion, and all through the pumas and jaguars of America and the cheetahs of India, down to the Egyptian cats, the period of gestation is known to be the same through all these cats.

The PRESIDENT said they were very much obliged to Dr. Haughton for his communication.

The Society then adjourned.

A NEW TEST FOR THE AMYLOID SUBSTANCE.

THE new reagent employed by Weiss for the detection of amyloid matter is safranine. It occurs in commerce as a dark red powder, and is obtained by the action of nitric acid and arsenic on impure aniline. It is very soluble in alcohol, less so in water. Sections submitted to the action of a watery solution of this reagent show, under the microscope, a beautiful orange-yellow staining of the amyloid substance, while the rest of the specimen is of a beautiful rose-colour. If the safranine be dissolved in water acidulated with acetic acid, the whole preparation presents a uniform rose tint—a phenomenon that Weiss is unable to explain. The colouring takes place very rapidly; the connective tissue is less tinted than the epithelial cells, and the cells less than their nuclei. Thick tissues colour well; those which have been hardened in alcohol still better; but not those that have been treated with chromic acid, or with chromates. Preparations thus coloured may be preserved for a long time in a saturated solution of acetate of potash. A few grains of safranine dissolved in a glass of water are sufficient, in many instances, to colour microscopic preparations.—*Lyon Médical* and *N. Y. Med. Record*.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Diabetes Mellitus.—DR. FINNY said: This specimen was taken from a woman who died of diabetes mellitus. She was aged thirty-seven years, married, and had had seven children, and had always lived in the county of Wicklow. She had been a large, heavy woman, and had been always accustomed to good food. She came under my care on the 17th of October last, and dated the commencement of her disease to four months previously, attributing it to mental anxiety. Her father and mother were rather delicate persons, but both lived to a good age. On admission she presented all the well-marked symptoms of diabetes, with a discharge per diem of 32 grains of sugar to the ounce, or about 6,400 grains a day on an average, as she daily discharged from $8\frac{1}{2}$ to 12 pints of urine for some time after her admission. On the 18th of November she complained of pain under the right mammary region, which was increased by taking a full breath. On examination a slight friction sound was heard in this situation. On Monday, the 24th, she broke out into a profuse perspiration at night, her temperature during the day being 98.5° , and rising in the evening to 100.2° ; while in the evening her pulse was 96. This elevation of temperature was remarkable, since in diabetes it is generally below par. The rise of temperature was due to the commonest of the complications of diabetes—namely, diabetic phthisis pulmonum, which it was evident had occurred at this period of the case. Over the region in which she complained of a stitching pain there was dulness on percussion to a slight extent. The breath sounds, however, were by no means abnormal—no crepitus or tubular sounds, and it was difficult, from its contiguity to the heart, to distinguish any intensification of the heart sounds. The patch of dulness corresponded to the fifth rib, and it was internal to the nipple. There was also some expectoration, which became more purulent towards the close of the case. On the 26th the dulness had increased somewhat, and on that day the urine showed the presence of albumen, which daily increased, with a diminution of the total quantity of urine and a lower specific gravity. The three following days the woman suffered greatly from weakness. On the 29th delirium set in and lasted the whole day, and death ensued in the evening. There was no peculiar smell, as is stated to occur in acetonæmia, nor was there any sudden coma.

On the day of her death her temperature had sunk to 96.4° , while her pulse had risen to 137. The specimen before you includes the brain,

kidneys, a portion of the liver, and the right lung. My object in showing these specimens is to confirm or otherwise the *post mortem* changes which writers have stated may be present. The middle lobe of this right lung is indurated, and there is a cheesy degeneration and a breaking into cavities of the prolongation between the diaphragm and the ribs. It will be seen that the least touch of the finger causes the contents of the cavities to be evacuated and the lung to break down. The posterior part of the lobe is hard, and a section of it shows a very good example of yellowish nodules, which would in former days be called tubercles, while the rest of the lung is in the state of hypostatic congestion. Over the seat of consolidation there is a distinct pleuritic thickening. The form of disease of the lung may be termed rapid catarrhal pneumonia, ending in ulceration and rapid destruction of the parts. Trousseau has given to this condition the name of gangrene of the lungs; considering such destruction of the lung in diabetic patients to be too rapid to be explained by the ordinary processes of inflammation. Pavy and Wilkes do not look on it as genuine phthisis, but consider it to be chronic pulmonary inflammation, ending in breaking down of tissue into cavities. It is noticeable that there are no cavities in the apices of the lungs, and no tubercles elsewhere. The kidneys are enlarged beyond the normal size, and show no sign of granular degeneration; they are soft on section, and under the microscope presented appearances of fatty degeneration; the epithelial cells were loaded with fat, though their outline is not destroyed or their shape altered. It is then a very good example of what may be termed simple fatty disease of the kidneys occurring in advanced diabetes; the liver is congested, but seemingly normal in size and structure; it is firm and of a dark colour—in fact, it conforms closely to the description of the organ in the majority of cases of diabetes. Some state that the disease involves fatty degeneration of granules of the liver, but this is denied by Forster and Griesinger. Klebs considers that it is peculiar to diabetes that the congestion of the liver should depend upon active hyperæmia. The chief interest of the case lay in the examination of the brain, since Dr. Dickinson has stated that in diabetes the brain has been found to present a porous condition in limited patches, that these patches exist in the white substance, and that each of these abnormally large holes contains a blood-vessel, the brain substance outside being absorbed, and that many of these can be readily seen with the naked eye. The greatest seats of this abnormal condition are, he states, the medulla oblongata, corpora striata, and cerebellum, and also the white part of the convolutions, which may be rendered cribriform from the number of these erosions. Dr. Dickinson further considers that this abnormal condition is a direct and primary cause of glycosuria. For the purpose of verifying or refuting his statement I carefully and minutely examined every portion of the encephalon. There was no doubt that in some of the convolutions

of the posterior lobe of the brain I recognised by the naked eye a great many small punctate foramina in the white part; but the corpora striata, the pons, the cerebellum, and the fourth ventricle, showed no abnormal appearance of any kind, and in many other brains I have seen more puncta cruenta. In order to correct any error which anxiety to find pathological appearances similar to what has been stated might give rise to, I determined to compare the brain with such brains as are usually seen in the adjoining dissecting-room; and in this I had the help of Professor Macalister, whose knowledge of anatomy rendered his opinion conclusive. He saw nothing abnormal, and did not consider the puncta at all too numerous or too large. Since, then, there is nothing abnormal in the condition of the specimen, so far as this case goes, Dr. Dickinson's statement is not confirmed, and naturally his theory cannot be maintained. His theory and facts have been challenged by Külz and Dr. Dreschfeld, as in five fatal cases of diabetes it was found that there was nothing abnormal in the condition of the brain. On the other hand, Müller has shown that such conditions, as described by Dr. Dickinson, may exist in brains of persons who had never had diabetes at all. The present case is interesting as illustrating the most usual cause of diabetes, its usual complications of affection of the lungs, and as confirming the grave prognostic value of the occurrence of albumen in the urine, and, lastly, as showing an absence of all pathological phenomena to account for the disease. I regret to say the condition of the pancreas was not investigated, since in fully half these cases some change—either degeneration, or of a fatty character—has been found in the pancreas. However, should that organ have exhibited any pathological abnormality, it would not have helped much to discover the cause of diabetes, since, as Senator remarks, disease of the pancreas is not always present in fatal cases of diabetes, and when present it is but another example of a secondary change due to the glycohæmia.—*December 13, 1879.*

Tumour of Lower Jaw.—MR. STOKES said: This large tumour, which I wish to submit to the consideration of the Society, I removed this morning from the left submaxillary region of a female, aged fifty-seven, who had been on that day week sent up to me by Dr. G. Plunket O'Farrell from the west of Ireland. He stated—and his statement was endorsed by the patient and her husband—that she had a large tumour about the size of a duck's egg underneath the inferior maxilla on the left side for a very lengthened period. It appeared thirty-four or thirty-five years ago, and gave her no sort of annoyance, uneasiness, or anything else during that period. She became the mother of a large family, and her health generally all through that period had been excellent. About six months ago she commenced to feel pain in the tumour, and shortly afterwards observed that it commenced to grow with surprising rapidity.

The pains she had were of that acute lancinating, stinging kind, so characteristic of malignant tumours. It remained perfectly movable until the day of her admission into the Richmond Hospital. There was no history in her family of any malignant disease. Dr. O'Farrell, who sent her to me, was strongly of opinion, having regard to the chronicity of the tumour and also to its mobility in every direction—it not being adherent to the bone or deeper structures of the neck—that it was essentially benign. After examining it I could not come to the same favourable conclusion—having regard to the condition of the tumour when she was admitted, whatever might have been the case formerly. Besides the characteristic pains, and the great rapidity of the growth of the tumour within a comparatively recent period, the skin over it was of that peculiar dusky, livid, lurid hue, which is so often associated with malignant tumours. The surface of the tumour was very irregular, and in some situations it was very much more dense than in others. It extended from the right side of the middle line of the neck, a little above the os hyoides, along the side of the neck, as far as the parotid region on the left side. Having regard to the chronicity of the tumour, to the apparent absence of any deep-seated disease, and to the fact that the patient's health was otherwise unaffected, and that she was extremely anxious that a chance of her life should be given to her by the removal of the tumour, I consented to perform the operation of excision, which was done accordingly. The removal of the tumour was attended with very considerable difficulty indeed, and took a very long time; however, we succeeded, without any untoward accident, in removing it. There are two distinct characters observable on it. One portion is that which remained for so great a length of time unchanged as regards its size, and in other respects. This portion has, judging by the unassisted eye, the character of a non-malignant growth. The rest of the tumour is of a different consistence. It is much more homogeneous, and presents to the unassisted eye quite the character of a soft cancer, breaking down on pressure—a soft pulpy mass. My conjecture is that so long as the tumour was confined within that strong dense cyst which we see surrounding a portion of it, it was to all intents and purposes benign, but that probably the cyst gave way about six months ago at some point, and from that opening this fungous growth proceeded, and was the cause of the great increase in the size of the outward tumour and of all the other symptoms.

Report of the Committee of Reference.—This tumour is certainly carcinoma. The question submitted to the Committee was whether the growth supervened on pre-existing glandular disease or was of independent origin. Two adjoining tumours exist—one immediately under the skin, and the other an old gland. In the opinion of the Committee the subcutaneous tumour was a primary carcinoma independent of the glandular disease. The gland showed evidence of invasion by the neoplasm.—*Dec. 13, 1879.*

TRANSACTIONS OF THE CORK MEDICO-CHIRURGICAL SOCIETY.

SESSION 1879-80.

President—DR. T. C. SHINKWIN.

Secretary—DR. D. C. O'CONNOR, Jun.

Report of a Case of Congenital Malformation of the Heart—Stenosis of the Conus Arteriosus with an opening between the Ventricles, the foramen ovale unclosed. By S. O'SULLIVAN, M.D., M.Ch.; Surgeon to St. Patrick's Hospital, and Assistant-Surgeon, North Infirmary.

W. D. was admitted to St. Patrick's Hospital for Incurables on the 8th of May, 1875. He was then thirteen years old. He died on the 15th of December, 1879, at the age of seventeen years. His parents were both of intemperate habits. His father died of Bright's disease a few years ago. His mother, aged about forty-five years, was married twice. Her appearance is most unprepossessing; the sight of one eye is impaired, the result of an accident, and her temper is very bad. She complained of having received ill-treatment from her first husband, especially on one occasion, when she received a kick in the abdomen whilst pregnant.

W. D. was her eldest child; some of her children died. Of those now living, the second was a healthy child up to the age of ten years, when he became suddenly crippled, and since then he has been obliged to go about on crutches; the third is an inmate of a Blind Asylum in Dublin, and the fourth is in an Industrial School, and is healthy.

There was nothing peculiar observed in the condition of W. D. up to the age of two years, when cyanosis and dyspnœa were first noticed, and became from that date more and more developed.

The external appearances observed when he was admitted to hospital were:—Head large in proportion to the size of his body, forehead very low, eyes prominent, the conjunctivæ slightly congested; nose rather flat and broad; double row of front teeth; chest badly developed, contracted between the axillæ and expanded towards the diaphragm; abdomen large; legs and feet remarkably small, the latter very fiat; the lower extremities did not appear to grow in proportion to the other parts of his body, the weight of which was apparently too much for them to carry; genital organs undeveloped, and continued so up to the time of his death; terminal phalanges of fingers clubbed. The entire surface of the body presented a cyanotic appearance, especially towards the extremities; even

the mucous membrane of the tongue and lips had a livid appearance. There was a loud systolic bruit audible over the entire cardiac region, increasing from the base downwards. The bruit entirely masked the second sound of the heart. There was observable a distinct vibration along the course of the jugular veins. Pulse at the wrist small and variable. Cardiac area of dulness considerably increased, especially towards the right side. The skin of the extremities was very pachydermatous; skin over chest and abdomen very thin. Besides the general blueness of the surface of the body the superficial veins were all very much congested, and had a greenish colour, especially in the face, neck, and chest. The surface of his body generally cold, even his tongue was at times cold to the touch.

Mental condition of a very low type; it was with great difficulty that he was taught anything. He could not learn the alphabet or numbers, but he had a great memory for particular days, especially the days of the week on which any of the patients were admitted to the hospital. A fact of this kind he could remember for months. He could play draughts, and would know when a bad move was made by another player when he was looking on. He was susceptible of receiving sufficient religious instruction to enable him to obtain the rites of his Church. He was very passionate and resentful of injuries, whilst he was most grateful for any kindness shown to him; very selfish, he would part with nothing belonging to him. One day I asked him to allow me to take some food which was by his bedside, and of which he could not partake, but he refused to give it up. His articulation was very imperfect, and it was with difficulty a stranger could understand what he said. When first admitted to the hospital he suffered from severe paroxysms of stupor, lasting for from twelve to twenty-four hours. The surface of his body became quite cold, and of a livid colour; his teeth were clenched; the pulse at the wrist was absent, and he lay apparently dead. It was with difficulty that he could be got to swallow a little fluid. When recovering from this stupor he suffered from convulsions of the hands and feet; there was a most offensive smell from his breath; an asthmatic cough came on, without ~~ex~~pectoration, but he suffered from a kind of gurgling as if of fluid in the trachea. After the fit he vomited. Immediately before these attacks, as well as afterwards, his appetite was increased. The only time he perspired was after these paroxysms. When first admitted he suffered from them nearly once a month, but subsequently the intervals between them were considerably lengthened.

For two years after his admission to the hospital he was not able to go up or down stairs, but after this time, in fine weather, he was allowed out in the garden for the sake of the air. His movements, however, were always very slow. Any exertion, or over-excitement, especially if in a passion, brought on an attack more or less severe. Dyspnœa and cyanosis

became much aggravated on these occasions. Of late he complained much of pain in the region of the heart, and in the left arm down to his hand. He was at all times disposed to sleep much, and of late he always slept in the erect position (sitting up in bed). He snored much, and his eyes remained open during sleep.

The urine passed before and after the fits of stupor was of a dark brown colour, and the fæces were black; at other times these secretions seemed natural. Two months before death he suffered from general anasarca, and during this time the fæces and urine were of the same colour as during the paroxysms. The liver could be felt extending some three inches below the margin of the lower ribs. He suffered from convulsions for several days before he died.

The treatment adopted was to provide him with nutritious food, and as much pure air as possible. Stimulants, wine or brandy, were occasionally given, especially during the paroxysms. Fumigations with spunk were on those occasions found useful. He also got, from time to time, draughts containing aromatic spirits of ammonia with spirits of lavender.

Autopsy, made twenty-four hours after death.—In making the *post mortem* examination, I had the valuable assistance of Messrs. Cotter and Power, from whose notes and subsequent dissections I have been much assisted in drawing up the following details:—The general surface of the body was of a purple colour; extremities œdematous. The penis and scrotum were gangrenous, and there was a large patch of ecchymosis on the left arm. The skin of the lower extremities was very much thickened; that covering the chest and abdomen was extremely thin; there was no fat developed beneath, and all the muscles, especially the pectorals, were wasted. The genital organs were small, and there was no hair covering the pubes. The skin covering the abdomen was of a green shade, the result of incipient decomposition. All the superficial veins were enlarged and turgid. A considerable amount of ascitic fluid was found in the abdominal cavity. The peritoneum was found adherent in several places, especially between the layers covering the under surface of the liver and transverse colon. The liver was enlarged, and engorged with venous blood, and presented an almost foetal condition, the fissures being well marked, and the right and left lobe of nearly equal size. Its length was eleven inches, breadth eight inches, depth three inches, and weight two pounds seven ounces. The ductus venosus was obliterated. The spleen was very much enlarged and congested. It presented several notches on its surface, and weighed thirteen ounces. The kidneys were very large and congested, and both together weighed twelve ounces. Patches of lymph, like tubercles, were observed scattered over the colon. The chest was very much contracted, especially in the upper part between the axillæ. Lower down it was more extended, especially towards the

right hypochondrium and the cardiac region. There were some pleural adhesions, especially towards the apex of the left lung, with slight effusion into both pleural cavities, and into the pericardium. There was also partial adhesion of the pericardium to the left lung, and the superficial veins appeared distended. On slitting open the pericardium the relation of the heart to the surrounding parts appeared normal; the heart, however, was seen to be considerably enlarged, and projected, both to the left and right sides, to a much greater extent than in the normal condition. Its superficial veins were enlarged and distended. The heart and lungs were removed, together with the great vessels attached. Their united weights were two pounds. The heart measured six inches from base to apex, four inches and a half in breadth at the base, and three inches in depth; the circumference of the base measured ten inches. The right side of the heart was hypertrophied, and exceeded considerably the size of the left, the walls of the right ventricle being three times the thickness of the left ventricular walls. The auricular appendix was enlarged and prominent, and the right auricle dilated. All the cavities, especially those on the right side, contained semi-coagulated, dark-coloured blood. The cavity of the right auricle was much enlarged, and the interior of the auricular appendix presented large and strong *musculi pectinati*—in fact, the cavity of the appendix was almost as large as that of an ordinary auricle. The walls of the auricle were thickened, and highly muscular. The *venæ cavæ* opened into the auricle in their usual position, but the mouths of both vessels were larger than usual. Three fingers could be introduced into the opening of the inferior vena cava. The orifice of entrance of the inferior cava was guarded by a large and well-marked Eustachian valve. The annulus ovalis was a prominent muscular ring, but a large aperture—the foramen ovale—existed in the position of the fossa ovalis in the septum between the auricles, establishing a direct communication between both. The auriculo-ventricular (right) opening was large, but was guarded by a perfect tricuspid valve, on the edge of which, however, might be felt a calcareous deposit. There was considerable stenosis of the *conus arteriosus*. Its entrance was marked by a calcareous ring, and the pulmonary artery arose from it in the usual manner. Two of the semilunar valves appeared adherent; the calibre of the artery itself was much diminished, and its walls were very thin. The *ductus arteriosus Botalli* was obliterated. From the fact that the interventricular septum was pushed over towards the left side, the aorta appeared to arise from the right ventricle, behind the pulmonary artery. Its entrance was guarded by semilunar valves in the usual manner. The upper part of the *septum ventriculorum* was incomplete, and an organised opening was established between the two ventricles, through which the finger could be passed from the right to the left ventricle. The aorta arose above this opening, thus communi-

cating with the two ventricles. The aorta itself was of normal dimensions, but relatively larger than the pulmonary artery. The left auricle and ventricle were situated posteriorly, and hidden from view by the enlarged right side of the heart, and the apex of the heart was formed by the right ventricular wall. The pulmonary veins entered the left auricle in the usual manner, and the left auriculo-ventricular orifice was guarded by the mitral valve, which was perfect. The muscular substance of the left ventricle appeared to be undergoing fatty degeneration. Calcareous deposits were observed on other parts of the heart. Both lungs were found incompletely developed, especially the left, which was very small, but they had the usual number of fissures and lobes. The left lung was very much compressed by the large heart. The lungs were congested in part, and emphysematous. There were scattered through them a few small cretaceous particles.

There are doubtless in this case many points of interest deserving of the careful consideration of the philosopher as well as of the physiologist and pathologist. We may ask how far did his physical organisation contribute towards his mental defects, and how far we may read in his physiognomy the peculiarities of his disposition? Addison, quoting a celebrated physiognomist, says, "that as a man has in the mould of his face a remote likeness to that of an ox, a sheep, a lion, an hog, or any other creature, he hath the same resemblance in the frame of his mind, and is subject to those passions which are predominant in the creature that appears in his countenance."^a Dr. Haughton observes, "that stupidity in reptiles is associated, as it often is in man, with a venomous and rancorous disposition; and that these defects, both intellectual and moral, seem to depend on an imperfect oxidation of the blood corpuscles."^b If such a position, in any particular case, can be clearly established, we have no doubt it will be conceded that the moral obligations of such an individual will be very trifling, if they exist at all. We must, however, draw the line between cases such as this, in which we find the disposition of the individual almost entirely dependent on some organic malformation or defect, and those where no such condition obtains. For, although in the latter we may have a physiognomy whose reading indicates a disposition of the worst description, yet we shall often find in such persons the noblest qualities, resulting no doubt from the wholesome restraint of their evil passions and the cultivation of their latent virtues.

"*Heu quam difficile est crimen non prodere vultu!*"—*Ovid*.

We are told that Socrates himself was an example of this latter class, and that when his disciples laughed at the physiognomist who, upon observing his features, pronounced him "the most rude, libidinous, and

^a Addison's Works. Vol. II., p. 399.

^b The Three Kingdoms of Nature. P. 264.

drunken old fellow that he had ever met in all his life,"^a the great philosopher told them "that the principles of his art might be very true, notwithstanding his present mistake; for that he himself was naturally inclined to those particular vices which the physiognomist had discovered in his countenance, but that he had conquered the strong dispositions he was born with by the dictates of philosophy." Moreover, even where malformation of the heart exists, causing cyanosis, it does not follow that the mental development is in any degree impaired, as is proved by the record of reported cases. It is highly probable that in those cases where the intellect is defective that the condition of the brain itself might account for such deficiency, and it is much to be regretted that there was no examination made of the condition of the brain in the present case. On the other hand, cases are recorded of malformation of the heart where no cyanosis existed and the mental development was deficient.^b

The earlier writers on the anomalies of the formation of the heart—including Meckel, who was "the first to collect very carefully in his archives his own observations and those of others"^c—compared them to the hearts of the lower animals. "In these days, indeed, the human embryo and its individual parts were thought to travel upwards through the rising scale of development of the animal kingdom, and arrests of development were thought to be due in part to the stopping of an organ's progress at the type of the lower form."^d It is not to be wondered at, therefore, that philosophers tried to draw a likeness between individuals and those animals whom they resembled in their defective organisation. "Next, with similar impropriety, excessive and inadequate development came to be opposed to each other." "These two phases . . . that of curiosity, and the other that of purely physiological research, were followed by the truly rational etiological one, and in the last ten years by a tendency which may probably be called the physiologico-etiological one. The first of these, which fully recognised the full importance of inflammation of the openings of the right side of the heart as a starting point, opened a new road, but became perfect by the influence of the more eclectic and general view." Rokitansky, Dirsche, Dittrich, Peacock, H. Meyer of Zurich, have contributed to these later views of the subject, and to Kussmaul is due the credit of having brought it "to the limits of our present knowledge." It is now beyond dispute that "the errors of formation and diseases of the ostia of the right side of the heart determine the pathology of congenital diseases of the organ."^e "The cause

^a Addison. Vol. II., p. 400.

^b Dr. R. Mayne in *Dub. Quart. Jour. Med. Science*, p. 46. 1848.

^c Ziemssen's *Cyclop. Pract. Med.* Art. on Congenital Disease of Heart, by Prof. Lebert. Vol. II., p. 312.

^d *Ibid.*

^e *Ibid*, p. 313.

of the development of all these anomalies is very obscure. The high blood pressure in the right side of the heart, during foetal life, is not alone a sufficient cause, for even when the pressure is still slight, deep-seated alterations may be already developed."

Dr. Peacock,^a in his lectures on the subject, describes the various malformations of the heart "from its earliest and simple conditions up to the more mature and complicated form." He gives instances in which the heart consisted of one, two, or three chambers; others in which the four chambers were found, but with imperfect septa; others in which the pulmonary orifice was obliterated; others in which the foramen ovale remained open, &c. He says:—"The various malformations . . . are more or less allied, and depend on arrest of the process of development by which the heart, originally consisting of one auricle, ventricle, and artery, is ultimately formed into the complicated organ as it exists in man." Having referred to Hunter's views of the cause of an opening existing in the ventricular septum—namely, the existence of obstruction at the pulmonic orifice during the earlier period of foetal life, he says, in accounting for the extreme forms of malformation:—"If obstruction, taking place during the growth of the septum, is capable of preventing its complete development, it may be inferred, that, if it occur at a still earlier period, it would entirely arrest its formation, causing the ventricle or auricle, or both, to remain single, or to present only rudimentary septa."

According to Professor Schroetter, of Vienna,^b stenosis of the conus arteriosus arises from myocarditis; the interstitial connective tissue increasing and contracting causes the disease.

In our present case myocarditis must be considered the starting point of the several malformations which we have observed. Stenosis of the conus arteriosus was the consequence of this inflammation; and, as we find an opening in the interventricular septum, we must conclude that the myocarditis took place before the third month of gestation, as we know that at this period the septum is closed. In consequence of the stenosis of the conus arteriosus the blood in the right ventricle has been obstructed in its passage through the pulmonary artery, and has been consequently forced through the opening in the yet incomplete septum ventriculorum, thus rendering its closure impossible.

In some cases Kussmaul and Peacock have ascribed the stenosis to muscular hypertrophy. Lebert says, "Although in cases of stenosis of the pulmonary artery of the foetus undeniable signs of inflammation of the endocardium of the valves can be demonstrated—such as growths, thickening, growing together, hardening, and calcification—nevertheless such signs are totally wanting in others."^c There is, however, sufficient

^a *Medical Times and Gazette*. Vol. I., p. 455, *et seq.*

^b *On Diseases of the Heart Substance*. Ziemssen's Cyclop. Vol. VI., p. 224.

^c Ziemssen's Cyclop. Pract. Med. Vol. VI., p. 313.

evidence in the case before us of the inflammatory origin of the disease. "Peacock^a traces the preference of foetal endocarditis for the right side of the heart to the continuation of the pulmonary artery into the descending aorta and umbilical arteries. He believes that the frequency of inflammation at the origin of the pulmonary artery is to be explained by the readiness with which transitory interruptions of the current may occur in the umbilical arteries and placenta—just as, in after-life, the manifold variations of blood-pressure in the arterial system may give rise to disease of the origin of the aorta." The parents of some of the children affected with these malformations have been known to be healthy, and had other children who were also healthy. There are others, however, in whom a history of syphilis or rheumatism might be traced, and the existence of either of these diseases if transmitted to the foetus would, no doubt, be sufficient to cause myocarditis. It is quite possible that many of the children of syphilitic parents, who are born dead or who survive their birth a short time, may be the victims of the disease under consideration.

According to Lebert,^b when the disease originates with myocarditis of the right conus arteriosus, it "may be of syphilitic origin." He says:—"I had a patient who was suffering from syphilis," which he communicated after marriage to his wife. "Secondary syphilis manifested itself in the woman, pregnancy afterwards took place, the child was born at the full time with all the symptoms of congenital pulmonary stenosis, but soon died." He goes on to say:—"Syphilitic myocarditis of gummatous nature was described and depicted by me years ago."

We may conclude, therefore, that myocarditis of syphilitic or rheumatic origin was the starting point in the disease causing the malformations described. In consequence of the limited flow of blood through the pulmonary artery from the right ventricle, the normal function of the ductus arteriosus—i.e., conveying, in the foetus, the blood from the pulmonary artery into the aorta—became more or less abolished, and consequently we find it obliterated, and thus rendered incapable of affording to the lungs, after birth, a collateral supply of blood from the aorta. To compensate for this deficiency the other collateral vessels must have become enlarged—namely, the bronchial arteries, branches from the aorta, and possibly the oesophageal arteries and the anterior coronary, all of which anastomose with the pulmonary artery. We find the lungs small and undeveloped after birth—the result, no doubt, of the insufficiency of the compensation described. Hence the return of blood through the pulmonary veins from the lungs to the left auricle, when respiration was established, must have been relatively small compared to the amount of blood flowing into the right auricle from the venæ cavæ, and, consequently, the balance of the two circulations—one on the right and the

^a Ibid.

^b *Medical Times and Gazette*, p. 1. Jan. 1, 1870.

other on the left side of the heart—which normally become established at birth, remained disturbed, and the blood from the right auricle continued to flow through the foramen ovale into the left auricle, thus rendering the closure of this opening impossible.

The hypertrophy of the walls on the right side of the heart must be looked upon as compensatory—nearly all the work, pulmonary and systemic, having been performed by this side of the organ. We must attribute the congestion of the lungs which we find associated with emphysema to general congestion of the systemic venous system to which the bronchial veins and capillaries form no exception; and as in this case the bronchial arteries were probably enlarged to afford a collateral supply to the lungs, it is possible that the bronchial veins were also enlarged; and perhaps we might even go a step further, and suppose that these veins returned a portion of the aërated blood from the lungs to the superior cava, thus supplementing the pulmonary veins which appear to have conveyed only a small proportion of blood to the left auricle.

The condition of the abdominal viscera which we have observed is, no doubt, due to the intense venous congestion to which they were at all times subject, and more particularly during the violent paroxysms from which he suffered from time to time, and more particularly during the last few months of his life.

The diagnosis was comparatively easy in our case, all the symptoms described being well marked. The bruit covering the two sounds of the heart was probably caused by the rushing of blood through the open septum ventriculorum. Cyanosis was also well marked. This symptom, although considered by some authorities as pathognomonic, is not so considered by others. The cause assigned for this condition is the insufficient compensation for the disturbance of the normal circulation through the heart and pulmonary artery. "For," Rindfleisch^a says, "as in the single-chambered hearts of fishes, the arterial and venous blood are mingled in the aorta, the lungs receive blood which is only half venous, and are, in consequence, less capable of removing the carbonic acid of the entire mass of blood. The blood becomes more venous; it is colder and darker than it ought to be. Add to this the accumulation of blood in the systemic veins, the inevitable consequence of every disturbance in its passage through the heart, but which is especially marked in cases like this. The veins of the extreme parts, of the lips, eyelids, nose, ears, hands, and feet, are permanently distended with blood, so that the blue, livid coloration of these parts, cyanosis, becomes one of the pathognomonic signs of the condition in question."

Lebert,^b on the other hand, says that "if the disease is of a nature to permit the development of a collateral circulation, the danger of suffo-

^a Pathological Histology. Vol. I., p. 299.

^b Ziemssen. Cyclop. Pract. Med. Vol. VI., p. 326.

cation, the great dyspnœa, and cyanosis decrease, the child becomes tolerably well nourished, dyspnœa and palpitation, though occasionally severe, appear only on exertion, and the child thrives and lives a bearable life, till either the compensation becomes less and less adequate, or till he is greatly shaken by an acute intercurrent disease."

The low temperature of the extremities was also well marked, and was, no doubt, caused by the stagnation of blood in the capillaries, and by insufficient oxidation. The asthmatic attacks, the convulsions, and the prolonged fits of syncopal asphyxia were, no doubt, all attributable to the same cause. The want of development of the extremities, the weakness of the muscles, and the absence of subcutaneous fat, the whole appearance of the patient not corresponding with his age, were auxiliary guides to the other symptoms in indicating the nature of the disease. The only symptoms relied on by Louis, as diagnostic of this disease, are—"a suffocation, more or less considerable, accompanied or followed by faintings, with or without blue colour of the entire body, and produced by the slightest causes."

Of the prognosis and treatment of such cases, little remains to be said more than that the former is usually bad, and that the latter is to be directed merely towards placing the patient in such a position as will be most favourable to quiet, supplying him with good and sufficient air and nourishment, freeing him from care and anxiety, and contributing to make his life, which is little better than a living death, as peaceful and happy as possible.

The age to which the boy lived is by no means exceptional. According to Lebert^a patients suffering from the particular malformation under consideration—namely, stenosis of the right conus arteriosus with an opening in the interventricular septum—"die from infancy to twenty-five years of age." Where the interventricular septum is closed and congenital stenosis of the pulmonary orifice or conus exists, Kussmaul^b says that "the duration of life is usually very brief, one mostly of a few days or weeks, and never reaches an entire year;" but Lebert says "an age of sixty-five has been attained."

It would appear to be well established that, in those cases where the abnormal deficiencies of the heart are trifling, life may be prolonged to an advanced period, whereas, on the other hand, "where the arrest of development is more extreme, and is combined with some form of obstruction, it becomes a source of serious suffering, and the duration of life is necessarily limited to a comparatively short period."^c Stolker^d

^a Ziemssen's Cyclop. Pract. Med. Vol. VI., p. 319.

^b *Ib.*

^c Medical Times and Gazette. Vol. I., p. 565. 1854. Lectures on Malformation of the Heart, by T. B. Peacock, M.D.

^d Ziemssen's Cyclop. Pract. Med. Vol. VI., p. 340.

gives a table of ninety-nine cases where death was recorded at various ages from the first day to the fortieth year.

According to Peacock,^a the immediate causes of death in persons labouring under malformation of the heart are:—"1. Congestion or inflammation of the brain, lungs, or other viscera; extravasation of blood into the substance of the brain, or profuse hæmorrhage from the lungs or alimentary mucous membrane. 2. Embarrassment of the circulation leading to dropsical effusions into the cellular tissue, pleura, pericardium, or peritoneum. 3. Disease of the heart superinduced upon its original defects, causing greater obstruction to the circulation, with dilatation of the cavities and failure of the muscular power. 4. Lastly, gradually increasing emaciation and exhaustion of the system generally, from the circulation of imperfectly aërated blood."

Lebert has shown that, in addition to the other causes of death in these cases, if the patient lives beyond the age of puberty, he is likely to fall a victim to pulmonary tubercle in consequence of the disturbance in the circulation which takes place at this time. He points out that, notwithstanding the capillary ectasis of the lungs which is common in disease of the left side of the heart, progressive tuberculosis is one of the rarest complications of disease of that side of the heart. He says, "it is an interesting fact in the study of inflammation, as well as of tuberculosis, that a direct disturbance of the supply of blood is much more irritating and conducive to inflammation than a great but constant and regular increase of it." These views, which are fully verified by reported cases, are entirely opposed to the dictum of Rokitansky, that "all cyanoses, or rather all forms of disease of the heart, vessels, or lungs, including cyanosis, of different kinds and degrees, are incompatible with tuberculosis, against which cyanosis affords a complete protection."^b

^a Op. Cit. P. 590.

^b New Sydenham Society's Translation. Vol. IV., p. 251.

THE DOCTOR
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CLINICAL RECORDS.

*On the Symptoms of Acute Mania, as they showed themselves in a Case which occurred in the Kinnetty Dispensary District, Parsonstown Union.** By HENRY N. DUDLEY, M.D., Univ. Dubl.

I HAD been eleven years engaged in the practice of medicine, and had seen some curious cases both in hospital and elsewhere, but none more so than that which I shall endeavour to describe—presenting, as it did, such a combination of symptoms that for many days my diagnostic powers were completely baffled, and had the patient succumbed during the early stage of his disorder, I should not unnaturally have concluded that I had been treating a case of genuine hydrophobia.

On November 19th, 1878, I received a ticket requiring my attendance on one E. Q., herd, living at Poulduff, a valley at the foot of the Slieve Bloom Mountains. The man was about fifty years of age, tall and muscular, married, and the father of a large family. About eight weeks before, as I was informed, he had been coursing, and in the act of taking a hare from a greyhound had been bitten on the hand by either animal, but which of them his family either did not know or would not tell. He himself was incapable of giving any information whatever, but an imperfectly-healed cicatrix on the extensor tendon of the middle finger of his left hand looked as if the part had been squeezed in a common pincers, or such a mark as one might expect to result from the bite of a hare. There was also a second scar of a similar nature on the front of the left forearm. My informants stated that the wound, instead of healing, had remained sore and angry for a long time, but that his general health was good. I inquired if he had been attending any sick cattle—thinking that he might have inoculated himself with some morbid secretion—but was told there had been nothing of the sort on the farm for months. As soon as the sore healed he became out of sorts; the middle finger and hand became inflamed; he lost his rest and refused food. On my arrival the patient refused to speak or open his mouth; his countenance wore a morose and sullen expression; head hot; face congested and perspiring; eyes slightly suffused; did not appear to recognise anyone; pulse full and laboured; heart's action irregular—66 in the minute; the hand presented the appearance usual in phlegmonoid erysipelas—the middle finger about twice its natural size. Having got four men to hold him, I lanced his finger, which discharged about a teacupful of bloody matter, which seemed to relieve him. I also gave him a mixture of tincture of the perchloride of iron, quinine, and sulphate of magnesia.

* A Thesis read for the Degree of Doctor of Medicine in the University of Dublin.

20th.—On visiting the patient this morning I was told that shortly after the lancing the evening before, the patient knelt down and thanked God that he was all right again; he also took his food and medicine regularly and had a good night's sleep. Pulse irregular—60; temperature 101°; skin moist; tongue clean and moist; eyes suffused, wild and staring; mind rational. The mixture acted well on bowels; urine slightly albuminous.

21st.—Has had a bad night and no sleep; his mind is depressed, and he imagines himself pressed for money by his creditors, who, he informs me, have been in the house annoying him all day; he also became very violent and ran out into the fields without any clothing but his shirt. Pulse irregular and intermittent; tongue moist and clean; salivary glands enlarged; has a short, dry cough; eyes wild and staring. Ordered an aperient, and to continue the mixture; erysipelas declining.

22nd.—Patient's condition unimproved.

23rd.—Have received no account to-day.

24th.—On my arrival this morning the patient was being held down by several men; his face pale; eyes staring; expression ferocious; pulse full, irregular, and intermittent—55 in the minute; talks incoherently; says he cannot open his mouth; has an incessant, harsh, dry cough; tried to put one of his young children into a pot of boiling water the previous evening; had to be held down in bed ever since. The hand was now nearly well. I scarified finger and hand afresh in several places and ordered a bromide mixture with chloral. His tongue had become furred and dry.

25th.—Patient became easy after two or three doses of this mixture; is now very prostrate; talks incoherently; passes his urine and fæces involuntarily; pulse 48, irregular and intermittent; eyes staring; face pale; tongue dry; has a constant, short, dry cough, attended with scanty expectoration and a large flow of saliva; heart's action weak; respiration jerking; has some difficulty in swallowing; lungs clear on percussion; respiratory murmur natural; tongue coated with a brown streak in the middle. Ordered beef-tea and wine, to omit the bromide mixture, and recommence the quinine and iron; hyoscyamus in porter at night.

26th.—Patient better; respiration more even; cough not so dry; saliva still flowing freely; takes food better; imagines he is a hound hunting a fox; pulse 50.

27th.—Patient quiet; pulse 92.

28th.—Pulse 80; slept well all night, but became very delirious on awakening; was obliged to go back to the bromide mixture and stop all stimulants except the porter.

29th.—Large bed-sores have formed on the buttocks, but he now passes his urine and fæces voluntarily.

30th.—Patient more sensible and quiet; a number of sores like small

boils, containing unhealthy sanious pus, forming on different parts of his body, particularly on his feet; takes food well, but has some difficulty in swallowing fluids; pulse 48, irregular and intermittent; heart's action exceedingly irregular. Ordered carb. ammoniæ, chlorate of potash and bark, beef-tea, and egg-flip.

December 1st.—Patient better; tongue cleaner; bowels regular.

2nd.—Patient rational; pulse 65, irregular; slept well.

6th.—Patient not so well; pulse 80, but regular; axillary glands on left side inflamed, also one at elbow-joint; slept badly last night, and slightly delirious.

The patient continued in a miserable state for some days—sometimes better and sometimes worse; the strangest features of his case being the great variations in the rate of the circulation and the very great irregularity of the heart's action, although his temperature exhibited no corresponding variations, but remained from 99° to 101° —whenever he would allow it to be taken, as there were days he was too violent to admit of its being done. About the middle of December I had a message to say that a string was hanging out of his finger. On visiting him I found part of the sheath of the tendon protruding from a partially healed incision in his finger. I removed about an inch of this, when the wound healed nicely. The patient now began to improve steadily; his heart's action became quite natural—65 in the minute; his sleep returned; he lost his cough and difficulty in swallowing; the paroxysms of excitement became less frequent; he regained his appetite and spirits, and before the end of the month was completely convalescent; his mind was perfectly restored, but he could remember nothing whatever of his long illness.

To conclude, I may add that in my opinion the symptoms in this case were produced by two distinct causes—the first, or major, being the introduction of an animal poison into the system; the second, or minor, being nervous irritation produced by a wound on a tendon.

The diagnosis of blood-poisoning became comparatively easy when, about the tenth day of his illness, an eruption appeared on the skin—at first in the form of vesicles, which soon became pustular, and was similar to that described by the late Mr. Colles.

The symptoms indicative of the wound on the tendon were such as occur in a more aggravated form in tetanus—namely, spasm and rigidity of the muscles of the head and neck, but particularly those of deglutition; they were most marked before the first scarification of his hand, although he afterwards suffered from them, especially when he attempted to swallow fluids, which always produced spasm; he had not the same difficulty with such solid food as he was able to take.

The case was chiefly interesting as showing the difficulty in arriving at a correct diagnosis in the early stage of a disorder exhibiting such a variety of symptoms as blood-poisoning.

THE DOCTOR SOCIETY FOR MEDICAL OBSERVATION

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
February 28, 1880.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	825	1010	18	21	40	1	34	28	9	41·7
Belfast, -	182,082	615	456	—	4	—	3	26	18	18	32·6
Cork, -	91,965	248	260	—	10	35	—	8	5	1	36·8
Limerick, -	44,209	118	105	—	—	—	—	—	4	3	30·9
Derry,	30,884	71	70	1	—	1	—	—	—	—	29·5
Waterford, -	30,626	57	84	—	—	—	—	2	3	2	35·7
Galway, -	19,692	30	36	—	—	—	—	—	—	1	23·8
Sligo, -	17,285	63	27	1	—	—	1	—	1	3	20·3

Remarks.

The death-rate in twenty large English towns, inclusive of London (in which it was 34·0), having an aggregate population of 7,499,468, was 29·1 per 1,000 of the population annually. In Glasgow the rate was 23·5, and in Edinburgh it was 21·2 per 1,000. The average annual death-rate represented by the deaths registered in *sixteen* principal town districts of Ireland, with an aggregate population of 862,144, was 35·4. In the Dublin registration district, omitting the deaths (26) of persons admitted into public institutions from outside the district, it was 40·6 per 1,000; while within the municipal boundary of Dublin it was 43·5. In the first week of the period the death-rate, influenced by low temperature and dense fogs, ran up to 48·1 per 1,000 in London. So excessive a mortality had not occurred in the metropolis since the cholera epidemics of 1849, 1854, and 1866. The mean temperature of the four weeks was 41·7° in London (Greenwich), 42·9° in Edinburgh, and 44·2° in Dublin. In the Irish capital the deaths from zymotic affections numbered 197, compared with a ten-years' average (in the corresponding

period) of 148·3. Measles declined considerably in fatality, but fever showed a decided increase, and smallpox, scarlatina, and whooping-cough continued rife. Of the 28 deaths from fever, 13 were ascribed to typhus, 12 to enteric, and 3 to “simple continued fever.” At the close of the period there were under treatment in the principal Dublin hospitals—of smallpox 73 cases, of measles 10, of scarlet fever 41, of typhus 53, of typhoid 21, and of pneumonia 9 cases. Whooping-cough, fever, and diarrhoea, were very fatal in Belfast; and the epidemics of measles and scarlatina continued in Cork. A death from smallpox was registered in both Derry and Sligo. The deaths from affections of the respiratory organs declined in Dublin under the influence of soft, mild weather. They numbered 247, compared with a ten-years’ average of 216·7, and included 195 from bronchitis (average = 177·1) and 33 from pneumonia (average = 20·4).

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1880.

Mean Height of Barometer,	-	-	-	29·647 inches.
Maximal Height of Barometer (on 24th at midnight),				30·504 „
Minimal Height of Barometer (on 16th at 4 15 p.m.),				28·373 „
Mean Dry-bulb Temperature,	-	-	-	44·4°
Mean Wet-bulb Temperature,	-	-	-	42·1°
Mean Dew-point Temperature,	-	-	-	39·5°
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·245 inch.
Mean Humidity,	-	-	-	83·8 per cent.
Highest Temperature in Shade (on 4th),	-			57·8°
Lowest Temperature in Shade (on 11th),	-			32·1°
Lowest Temperature on Grass (Radiation) (on 6th),	-			29·0°
Mean Amount of Cloud,	-	-	-	63·9 per cent.
Rainfall (on 17 days),	-	-	-	2·581 inches.
General Direction of Wind,	-	-	-	S.W.

Remarks.

An open, windy month, with frequent rains from the 4th to the 19th. There was scarcely any frost except on the grass; the minimal reading of the thermometer in the shade was 32·1° on the 11th. The mean height of the barometer—29·647 inches—was no less than 0·660 inch lower than that in January—30·307 inches; and the barometrical range was also very large—namely, 2·131 inches. Except from the 22nd to the 24th, when an anticyclone lay over the British Islands, steep barometrical gradients for S., S.W., or W. winds existed over Ireland and Scotland. Hence fresh to strong equatorial breezes prevailed,

giving to the month its character already described. In Ireland S.W. winds and beautiful spring-like weather were experienced during the first four days. On the 4th the thermometer rose to $57\cdot8^{\circ}$ in the shade in Dublin, the sun meanwhile shining brilliantly. On the 7th a very heavy fall of rain ($\cdot599$ inch) occurred in connexion with a cyclonic system which passed northeastwards south of Dublin. From this time until the 21st the atmosphere remained in a very disturbed state, numerous depressions or bourrasques travelled to N.E. or N. along the western coasts of the British Islands. An anticyclone, accompanied by severe frost, lay over the North of Russia, Lapland, and Sweden from the 10th to the 18th, thus increasing the steepness of the barometrical gradients over the West of Europe. On the 16th and 17th a difference of more than two inches existed between the readings of the barometer at Haparanda on the Gulf of Bothnia and in the W. of Ireland. On the morning of the 19th the thermometer stood at minus 25° Fahrenheit at Archangel. In the forenoon of this day (the 19th) a thunderstorm passed over the county Cork. An area of high pressure also formed over the United Kingdom on the 22nd, but it was not permanent, and from the 25th to the close of the month another series of disturbances swept over North-western Europe from W. to E. In Dublin no snow or sleet was observed. Hail fell on but one day—the 15th. Lunar coronæ were frequently seen after the 20th, and more or less perfect solar halos were visible on the 7th, 10th, 11th, 13th, and 19th. The atmosphere was foggy on the 3rd, 11th, 13th, and 24th.

TREATMENT OF PRURIGO BY PILOCARPINE.

FROM the observation of the fact that sufferers from prurigo feel relief when the secretion of the sudoriparous glands is active—as, for example, in summer—O. Simon (*Allgem. med. Centr. Zeitung*) has been led to try the preparations of pilocarpine, and of jaborandi itself, in this distressing condition. A very numerous series of trials have persuaded him of the beneficial action of this means of treatment. In adults he uses a subcutaneous injection of pilocarpine, or prescribes a syrup of jaborandi. The patients, soon after the administration of the medicine, are enveloped in blankets for two or three hours. In patients suffering from psoriasis the perspiration is very scanty, while in pruriginous patients it is very abundant. The effects of this mode of treatment were, abatement of the accustomed sense of pruritus, softening of the skin, and diminished tendency to relapse. In general the case did not last longer than a fortnight, and in very severe cases three weeks.—*Lo Sperimentale*, Gen., 1880.

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PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ON THE INOCULATION OF TUBERCLE, SPECIALLY IN THE IRIS OF THE
RABBIT.

A SERIES of experiments on this subject by Dr. Salomonsen are of great interest, as from the position of the part operated upon the development of the tuberculosis could be followed in all its stages. The experiments consisted in introducing into the anterior chamber through a peripheral corneal section one to two cubic millimetres of the substance which was to be inoculated, and by slight friction on the cornea bringing the substance to the lower part of the chamber. The experiments are divided into four groups:—1. The inoculation was followed immediately by keratitis and panophthalmitis, which caused such opacity of the cornea that the intraocular changes could not be followed. The substances used in these experiments were all taken from bodies some time after death, and the inflammation must be looked on as of septic nature. 2. No change beyond passing hyperæmia of the conjunctiva and iris followed the inoculation. The substances used in this group were various—as portions of healthy tissues, of carcinoma, of gummy tumours, of tissues in inflammatory induration, and cheesy nodules from the lungs of tuberculous animals, but which had been dried at 100° or boiled, or treated with absolute alcohol. 3. In these the inoculation was followed by a tubercular iritis, succeeded by panophthalmitis and generalised tuberculosis. The materials used were scrofulous and tuberculous matter from the bodies of men, guinea-pigs, and rabbits. The course of phenomena in these cases was as follows:—After a passing hyperæmia the eye returned to its normal appearance, and for three or four weeks manifested no change. During this time the inoculated substance could be seen to grow smaller. Succeeding this period of incubation there supervened an iritis sometimes preceded, sometimes followed by the development of tubercles in the iris. There appeared suddenly in the iris one or several gray nodules, visible only by a lens, and surrounded with slight vascularity. These increased in size and number, and in a few days in the centre of each a yellow point was noticed, the commencement of caseation. A true iritis soon followed. The iris became crimson (albino rabbits), swollen, and radially wrinkled; whitish flocculi were seen on its surface, chiefly at the pupillary edge. The aqueous humour became turbid, and a keratitis commencing at the margin soon extended over the whole cornea, obscuring the further changes which were those of panophthalmitis, effusion of bloody

and purulent fluid into the anterior chamber, &c., &c. In other cases the inflammation of the iris preceded the first appearance of the tubercles. These were then difficult to see in the swollen tissue until they had become cheesy. Here, too, keratitis and panophthalmitis put a stop to further observation during life. At the autopsies it was found that all those animals who had survived for some months the development of tubercle in the iris presented tubercles in the lungs, and frequently cheesy foci in other viscera. On the other hand, those animals who died or were killed in the period of incubation or in the earlier stages of ocular tuberculosis manifested no sign of visceral disease. The appearances revealed by microscopic examination of the tubercles of the iris resembled perfectly those seen in cases of tubercle of the iris in men—an outer zone of closely placed cells resembling leucocytes, a centre of fatty granular *débris*, very rarely cretaceous, and an intermediate zone of cells larger and more granular than those of the outer zone. A reticulum or giant cells were never found. Twice only the inoculation of cheesy matter was without effect, although other portions of the same material had shown itself active in other animals or in the other eye of the same animal. In guinea-pigs the experiment with one exception always failed in consequence of the early supervention of irido-choroiditis. In one case on the seventeenth day tubercles similar to those of the rabbit were seen. Four experiments were made on cats; one of these failed, the others gave negative results. 4. Nine experiments gave doubtful results. Inflammation supervened as in the experiments of group 3, but the presence of tubercular nodules could not be absolutely established. It is possible that in these cases there was a diffuse tuberculosis. The material employed in these experiments was—(1) pulmonary cheesy nodules from rabbit; (2) chronic suppurative panophthalmitis developed after inoculation of miliary tubercle from man; (3) scrofulous osteitis.—*Nordiskt medicinskt Archiv*, XI., 3–4.

J. M. P.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XVI.—*The Diagnosis and Treatment of Pleural Effusions.**

By JOSEPH W. HUNT, M.D. (Lond.); Physician to the Wolverhampton and Staffordshire General Hospital.

No single physical sign is by itself diagnostic of pleural effusions, and it is the evidence afforded by the sum of them that we have to consider; and even when all the recognised physical signs are present, their presence may be due not to a collection of fluid in the pleura, but to a malignant growth in the lung. Undoubtedly, the most important sign, confining myself—as I do throughout this paper—to the adult patient, is the absence of vocal fremitus. It distinguishes this disease from nearly all cases of consolidation of the lung, from any cause, with the fortunately rare exception of a few cases of malignant disease. But it is not always completely absent, and in such cases even its presence assists us, by suggesting the possibility of pleuritic adhesions, connecting the lung with the thoracic walls, and conveying the vibrations to the superimposed palm. Next in importance, with regard to diagnosis, is the displacement of neighbouring organs, and especially the heart. Such displacements of the cardiac organ prove an increase in the contents of the thorax, with the exception that occasionally the heart may be dragged over—even, as I have seen, into the right axilla—by a contracting lung. Such an increase in the

* Abstract of a Paper read before the Wolverhampton District Medical Society.

thoracic contents may be brought about by effusions, pneumothorax, and new growths. The physical signs of pneumothorax declare themselves, but the diagnosis of malignant growth is more difficult, and will be referred to presently. We must never forget that displacement of the heart may be simulated by congenital malposition. A third common physical sign is a want of uniformity between the two sides, but here more than one source of fallacy awaits us. The bulging may be only apparent, and really due to some old contraction of the opposite side, or the chest may be deformed from some infantile affection, from some injury, or the position of the patient, necessitated by his employment. Pleuritic effusion differs from these, in that the unilateral bulging is more or less uniform, and in the frequent obliteration of the intercostal spaces. On the other hand, owing to unnatural rigidity of the ribs, these signs are not seldom wanting, though in such cases it will be generally found that while each semicircumference is about equal on a full or normal inspiration, or on a deep expiration, the measurement of the unaffected side is considerably less. If the patient comes under our notice at a late period of the disease, the affected side may be even contracted from the process of spontaneous cure. The other physical signs commonly narrated in our text-books may be passed over as of comparatively little importance.

Symptoms, considered apart from physical signs, do not often afford much aid; but I would remark, in passing, that if there be much working of the *alæ nasi*, a considerable alteration in the pulse respiration ratio, or herpes on the lips, we may rest assured that some other disease, probably pneumonia, is present in addition to the pleuritic effusion.

It will be readily inferred from the preceding that the disease most nearly simulating pleural effusions is cancer of the lung. Fortunately such cases are rare, but I have seen them more than once not only perplex, but even deceive the most accomplished physicians. Some aids, however, to our diagnosis will be generally found, if carefully looked for. Thus the bulging is not so marked, nor so uniform; the intercostal spaces are obliterated, the upper border of dulness is irregular; nor is this dulness uniform throughout the affected area, the presence of portions of healthy lung rendering it more or less patchy. The extent of dulness never varies with a change in the position of the patient, and the displacement of the heart and other organs is generally less marked. Assistance

may be derived, too, from a careful consideration of the symptoms. The expectoration may be considerable and blood-stained, producing "currant jelly expectoration," or pressure symptoms may be present, as also enlarged glands in the supraclavicular fossa or the axilla. Above all we have, in doubtful cases, a certain aid to diagnosis in the use of the aspirator-needle. If used simply for diagnosis, and without the idea of withdrawing the fluid—if such be present—I much prefer the use of the needle attached to a hypodermic syringe. It is an almost painless operation, and can scarcely be productive of harm. Two words of caution—do not trust to a grooved needle, for it has more than once failed to withdraw any fluid, though such was present in large quantities; and again, be not satisfied with one aspiration if only negative results are obtained. Any solid matter coming away in the eye of the needle should be carefully examined under the microscope.

Again, we must remember that, even if we are certain that fluid is present, it may be secondary to malignant growths in the lung or mediastinum. Here the history of the case will not help us, for pleurisies of the most acute onset may be secondary and not primary in origin. I have seen in consultation a patient of middle age, who, when at work, was seized with the most acute stabbing pain in his side, followed by the physical signs of a large effusion. This I believed to be—as was afterwards proved—secondary to a mediastinal growth. A distended vein, an unequal pulse, a little œdema, an enlarged gland, slight hæmoptysis, are all of great significance in the eye of a careful observer. Occasionally we have no suspicion till the blood-stained fluid drawn off by the aspirator reveals the true state of affairs, for cancer is by far the most frequent cause of this condition. Frequently, too, the effusion is secondary to tubercle, and we may be led to a right conclusion by the fact that in such cases the effusion is often double, or that one side is affected soon after the other.

The last important point with regard to diagnosis is the character of the fluid contained in the pleura. What lucid rules are laid down for our guidance in this matter. How frequently we are deceived. I have more than once seen patients with a high evening temperature and marked morning remissions, night sweats, emaciation, and even an occasional rigor—in fact, all the symptoms of hectic—in whom the fluid was proved by the aspirator to be serum; and, on the other hand, I have seen pus associated with an absolutely and a continuously normal temperature. The only certain

aid we can draw from the temperature-chart is when it partakes, for a considerable period, of the intermitting type—that is to say, is normal in the morning, with an evening rise to 103° or 104° . Much emaciation, with marked disturbance of the general health, œdema of the affected side, clubbed fingers, with the want of amenability to treatment, may aid our diagnosis. Here again the aspirator-needle comes to our assistance, and will give us certain information. The aspirator-needle is more useful than the hypodermic syringe, as it enables us to draw off the fluid if we think it requisite. Dr. Churton, of Leeds, believes (*Brit. Med. Jour.*, Feb. 14, 1880) that the position of the patient has a great significance—that if the patient is unable to lie on the affected side the fluid is purulent—but my experience scarcely bears him out in this statement.

The treatment of pleural effusions will be considered under two heads, as the fluid is serous or purulent. If a case of simple serous effusion is seen at the onset, before the effusion has become excessive, it may sometimes be cut short, as has occurred lately in my own experience, by the application of several leeches to the affected side, followed by linseed-meal poultices, frequently changed. Such treatment is more likely to be of benefit in the earliest stages, before the presence of effusion; but even in later stages, if there is much pain on respiration, much tenderness on pressure in the intercostal spaces, and if the amount of fluid is increasing, leeches will often prove of great service. In the acuter forms of the disease blisters are very unreliable, and, in my opinion, are especially to be avoided if the fever runs high and the urine is scanty. For internal administration strong diaphoretics, such as acetate of ammonium, nitrous ether, &c., are very useful at the commencement. A few days later on, if there be no improvement, a diuretic mixture may be substituted for the diaphoretic. The one which I most frequently use contains iodide, acetate and citrate of potash dissolved in decoction of scoparium, and exhibited every four or six hours; but the drug on which I place most reliance is, undoubtedly, jaborandi, for I have used it with the most marked and successful results even when all other remedies have failed. But, to this end, it must be pushed rapidly, so as to cause extreme diaphoresis—commencing generally with about 30 minims four times a day, and increasing rapidly the quantity and the frequency of the dose till the patient may be taking 3j. to 3iss. every two or three hours. Such treatment almost invariably requires to be followed up by some tonic

(especially the perchloride of iron), and the local application of iodine is frequently necessary to complete the cure.

The general treatment requisite is much the same as in all similar febrile diseases. The bowels should be kept freely open, the diet should be light and unstimulating, and fluids taken as sparingly as possible.

In the early stages, if the fluid shows any tendency to increase, or if there be much pain and tenderness, the patient is frequently much benefited by firmly strapping the side. The strips of plaster should reach from the midsternum in front to the spine behind, and should overlap each other by about one-third of their width. If the patient does not come under our notice till the effusion has become chronic, or if it have continued in spite of the treatment mentioned above, another plan of treatment must be followed. Now that the febrile condition has passed away, much benefit will probably be derived by the application of small flying blisters to the side, or some strong preparation of iodine frequently repeated. The diaphoretics mentioned above will have lost their value, with the exception of jaborandi, which I more than once used successfully from six to twelve weeks after the commencement of the disease. The diuretic treatment above referred to may still sometimes be advantageously pursued; but probably most benefit will be derived from following a tonic line of treatment. Thus, if there be much anæmia, the exhibition of the perchloride of iron in large doses is indicated; if there be much night perspiration, with general relaxation of the tissues, bark and acid will be of advantage, or quinine may be administered either by itself or in addition to the iron; if the digestive system be good, small doses of cod-liver oil often prove beneficial. The diet should be of a more nourishing character than was advisable before, and stimulants may not infrequently be given with good results. For the better class of patient I prefer a wineglassful of port or of claret, according to circumstances, twice a day, and for the poorer classes a tablespoonful of brandy, given in milk, twice or three times a day.

The question of aspiration, as one deserving of special consideration, I have purposely kept to the last. I have very little doubt in my own mind that the aspirator is had recourse to much more than is necessary, while, on the other hand, sudden death has more than once followed non-interference. More often than not, however, this painful occurrence is brought about by some injudicious act either of the patient himself or his attendants. The case of a

patient who tripped gaily across the lawn with a chest full of fluid, to fall down dead at the feet of the physician who records the case, is not, as he argues, so much a proof that the chest should have been aspirated as it is a proof that the patient should have been kept quiet in bed, or, if removal had been necessary, that she should have been carried, and not allowed to walk or run. Again, while I have seen, in my own practice, the pleural cavity entirely emptied by one aspiration, and the patient restored apparently to perfect health from that time, I have seen more cases in which, after what at first appears a successful aspiration, there is a very slow recovery, and it is a long time before all the fluid is absorbed and the patient recovers anything like his normal health. But here the question arises—Is not this in spite of, and not on account of, the aspiration? Would not the recovery have been still more tedious without it? Furthermore, there is no doubt serious results may follow aspiration. I do not say they are always caused by it, but the sequence is very suspicious.

Such results I have seen occur in the most experienced hands. Among these the most common are a purulent change taking place in the fluid, and the establishment of a pneumothorax. The rules which I follow in my own practice are somewhat as follows:—If the amount of fluid be moderate, the effect of internal remedies are tried for two to three weeks; and if then the fluid shows no sign of diminishing, the aspirator is used. If the fluid be abundant, and resist treatment for more than a week or ten days, I aspirate, or in any case in which the pleura is filled with fluid, the heart much displaced, and especially if there are signs of interference with the action of the other lung, if there be much lividity, working of the *alæ nasi* when at rest, if there be much dyspnoea or threatening of syncopal attacks, I aspirate at once. Again, when associated with the physical signs of fluid are high temperature, rigors, night sweats—in short, signs of hectic, the aspirator-needle ought to be introduced, and if pus be present, it should be removed. Even if in such a case the fluid was proved to be serum, I should most probably withdraw as much as could be taken without distressing the patient. Having decided to aspirate, the operation cannot be performed with too much care. It ought to be conducted very slowly, and the vacuum ought to be no greater than is sufficient to enable the fluid to run in a small stream. We thus exercise very little pressure on the lung, and by the slow withdrawal of the fluid the lung is able to accommodate itself to its new position

much more readily. The onset of dyspnoea, or much cough, or any tendency to syncope, warns us that we are performing the operation too quickly, and if, on our reducing the speed, any of these symptoms continue, we ought at once to withdraw the needle. It is by no means necessary to withdraw the whole of the fluid. The removal of even a small quantity seems often to start the process of absorption, and lead to a successful result. Again, when the lung has been long compressed by a large amount of fluid, it is better to empty the pleura gradually by a series of aspirations spread over two or three weeks. The lung thus gradually accommodates itself to the altered state of affairs, and is led rather than forced to resume its normal position.

Severe neuralgic pains, originating in the intercostal nerves, frequently follow pleuritic effusions. In such cases, quinine, iron, arsenic, and iodide of potassium, are the most useful remedies, and are much aided by firmly strapping the side, or by wrapping it in cotton wool, or warm flannel.

If the fluid be purulent, operation in some form or other is almost a necessity, for in adults such effusions are rarely absorbed, and they tend to find their way out of the pleural cavity in some direction or other—hence it is our duty to anticipate nature. For this purpose the first means to be tried is, no doubt, aspiration, and aspiration frequently repeated. We all recognise the fact that, on account of the greater density of the fluid, the lung is much more compressed than in cases of serous effusion, and it is more liable to be bound down to the chest walls by bands of adherent lymph. If we draw off all the fluid, the lung is generally unable to go far towards regaining its original condition, and the ultimate result is that the pus reaccumulates. What I suggest, then, and what I have very satisfactorily accomplished, is, as I have explained before under the treatment of serous effusions, that the lung should be gently led, and not forced; that the aspirations should be frequently repeated every two or three days, only removing a small portion of pus at a time. Thus the lung gradually expands, and in favourable cases may ultimately resume its normal position. If aspiration, though frequently repeated, fails, our only resource is to make a free outlet for the pus. This is best done by making a double opening into the chest walls, and passing a drainage-tube through. The cavity should then be washed out once or twice every day. If antiseptic precautions are used at the operation, and antiseptic dressings applied, the cure is much expedited, and the

general system does not suffer so much. As the chest wall falls in, it is frequently necessary to gouge away a portion of the ribs to obtain room for the drainage-tubes, or to protect them by some more substantial substance, as metal piping or a piece of strong quill. It has been suggested that in cases where the chest wall does not retract readily, owing to unnatural rigidity of the ribs, subcutaneous osteotomy of the ribs might be performed with advantage. This I have never practised myself, and am, therefore, unable to give any opinion as to the ultimate results.

ART. XVII.—*A few Observations on the Symptoms and Treatment of Diphtheria.** By WALTER BERNARD, F.K.Q.C.P., Londonderry; late Principal Medical Officer, Third Division Army Works Corps, Crimea.

THE subject of diphtheria may appear to most of you a very trite one, and, no doubt, you will wonder that I have chosen to address you on a disease about which so much has been written. The great importance of a correct understanding of the clinical facts connected with the affection will, I think, prove a sufficient apology for bringing before you a few observations which will, I trust, serve as a nucleus round which much important information will come from experienced, accurate, and thoughtful observers. My object is to elicit, rather than to impart, information.

I shall purposely avoid speaking on the history and etiology of this disease, or on the identity or non-identity of membranous laryngitis and diphtheria. Accordingly I shall at once proceed to consider a few of the most important symptoms.

It is held by some very high authorities that in diphtheria the constitutional disturbance, as in smallpox, is in proportion to the extent of the disease. In my experience this relation between the extent of the membrane and the constitutional disturbance has very frequently been found wanting. The constitutional symptoms may be almost absent, and yet there may be extensive deposit on the back of the pharynx, the tonsils, and soft palate. The following case, which may serve as a type of many others, will illustrate this:—

CASE I.—E. S., aged eight years, was first seen by me on the 20th of last February. The pharynx and tonsils were covered with the charac-

* Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, April 7, 1880. [For the discussion on this paper see p. 442.]

teristic membrane, and the lymphatic glands were enlarged at both sides of the neck, more especially on the left side. The child felt so little ill that he begged to go to school. Temperature was normal. *Fœtor ex ore* was so well marked that it was perceptible on entering the room. This was the symptom which alarmed the mother, and caused her to seek medical aid. The membrane extended down the back of the pharynx as far as I could see. Pieces of membrane were expectorated during the progress of the disease. In this case at no time was there evidence of the larynx becoming involved. In many cases I have derived much advantage, as far as my peace of mind goes, by recollecting that, after the lapse of one week, if constitutional and local treatment have been sedulously attended to from the onset, the chances are that the larynx will not become involved. I will not trouble you with many of the details of this case. The membrane separated and ceased to form on the seventh day, leaving behind superficial ulceration. Herpes appeared on the lip when the membrane ceased to re-form. There was no appearance whatever of a membrane forming on this eruption. In several other cases I have observed herpes labialis, and, from my experience, I am inclined to regard this occurrence as a favourable omen.

Albuminuria is a symptom to which we must be careful not to attach too much importance in forming a diagnosis. It may be present in other diseases which simulate diphtheria—for the sake of example, inflammatory croup—and may occur even in persons apparently in perfect health. In the latter instance it has been called latent albuminuria by Dr. George Johnson. Moreover, it may be absent in true diphtheria, as occurred in a good many of my cases. Greenhow says that he has “several times been unable to detect albumen by the proper tests in very malignant cases of diphtheria.” It has been stated that the affection of the kidneys is due to the presence of vegetable organisms which are said always to exist in diphtheria. If this were so, albuminuria would be most probably a more frequent complication. Moreover, that albuminuria occurs at a very early period of the disease, before the local process has become developed to any great extent, does not support this view.

I have observed aphthous ulceration on the inside of the lips and on the tongue before the exudation on the pharynx appeared. In the same house, in which true diphtheria existed, I have known members of the same family to have aphthæ with follicular tonsillitis.

The following case is interesting on account of a rare com-

plication. I shall briefly mention the main facts connected with it:—

CASE II.—P. C., aged seven years, took ill on the 28th of May, 1879. He had slept with his little brother, who subsequently died of diphtheria, seventeen days before the exudation was observed on the pharynx. On the day the membrane was first observed his entire body was found covered with a nettle rash which remained four days. He went through a mild course of diphtheria, and the membrane ceased to form simultaneously with the decline of the nettle rash.

I shall mention one more case, which is interesting from the fact that diphtheria followed, and coexisted with, a purpuric eruption:—

CASE III.—E. M., aged nine years, took ill in the early spring of 1878. A year and four months before this, her sister, aged three years, died of diphtheria in the same house. When first seen she had purpuric spots on the legs, and tenderness and swelling of the left knee and elbow-joint; the lymphatics of the neck were enlarged, and a patch of membrane appeared on the left tonsil, which quickly spread over the fauces. The membrane ceased to be re-formed on the sixth day. Her recovery was slow; four months at least elapsed before she regained her full strength.

With regard to diagnosis, I consider that the presence of a membrane is essential. We may, however, form a retrospective diagnosis from the occurrence of paralysis as a sequela of a doubtful throat affection. Difficulty in diagnosis sometimes occurs in mild cases. It is often hard to distinguish between a diphtheritic membrane and a follicular secretion. The practised eye can, as a rule, see a difference between them. A secretion is seen to dip down into a follicular depression and can be more easily removed than a membrane. It has been stated by Flint, in his work on Clinical Medicine, that “if the layer be thrown off within twenty-four or thirty-six hours, this is a proof of its having been a secretion, not an exudation.” With all due deference to so high an authority, I cannot but think that there are very many exceptions to this rule. There are two cases recorded in *The British Medical Journal* for January 25, 1879, by Dr. Eigenbrodt, in which the membrane disappeared within twenty-four hours after it was seen. In one of these cases it re-formed, in the other it probably did not. I am of opinion there are many cases of mild diphtheria in which the membrane is thrown off within thirty-six hours, and in many of such intercurrent results tend to fortify this conclusion.

I think it right to commence the discussion as to the most

appropriate treatment of this disease by drawing attention to what I have ventured to call the *prospective treatment of diphtheria*. By this I mean the careful and energetic local and constitutional treatment of all acute and chronic affections of the throat. Too much attention cannot be paid to this in our daily practice, for there can be no doubt that these affections, when neglected, predispose to diphtheria.

There appears to be some difference of opinion among writers on diphtheria as to the relative importance of the constitutional and local treatment. Oertel, considering that the disease is first local, then constitutional, thinks the local treatment the more important, while Professor J. Lewis Smith thinks that much harm has been done by the propounding of such a view, and gives his opinion that the constitutional part of the treatment demands a very large share of our attention. The question as to the relative importance of these two modes of treatment altogether depends on the views we hold as to the pathology of the disease. Some late German writers aver that the disease is primarily local, secondarily constitutional. If we hold this view, how are we to account for those cases which prove fatal from the intensity of the morbid process before the local affection is at all well marked—before, in fact, any exudation exists? That such cases do occur I think few of us will deny. From analogy we have strong presumptive evidence that such cases occur. The characteristic whoop may be absent in whooping-cough, the rash may be absent in scarlet fever, the typhoid poison may manifest itself by a febrile or non-febrile gastric catarrh. Furthermore, if diphtheria were primarily a local affection, the result of early and energetic treatment to the *fons et origo* of the morbid process would be more brilliant than they have yet proved to be. Clinical history does not, as it appears, support this view held by late German writers. We must regard, I think, diphtheria as primarily a constitutional disease, but we must be careful not to attach too little importance to the local process. That the constitutional symptoms are in part due to the local process there can be little doubt, for three reasons:—First, local treatment has much influence in modifying the general symptoms; second, in certain cases the fever increases *pari passu* with the increase of the membrane; third, in membranous laryngitis, which is now looked upon by many very high authorities as diphtheria, the constitutional disturbance is not, as a rule, so well marked as when the membrane is present on the pharynx. No hard-and-fast laws can be laid

down as to the question of the relative importance of the constitutional and local treatment. In this disease, as in all others, we must treat the patient, not the disease. In many cases, at the beginning, I regard the constitutional treatment as of paramount importance, and, as the disease progresses, the local treatment gains in importance. It is difficult to determine to what extent the symptoms are due to the local morbid process. The whole nicety of the treatment consists in giving due importance to each mode of treatment.

I, as a rule, order a nutritious, easily-digested diet, along with stimulants. It is surprising how well children suffering from diphtheria bear a large amount of alcohol. As medicines I prescribe the benzoate of soda, sulphurous acid, chlorate of potash, and tincture of the perchloride of iron. If fever runs high I use quinine or salicylate of soda. I have no experience of other modes of reducing temperature. As local treatment I persevere in frequent application of antiseptics and solvents to the diseased parts. I find carbolic acid the best antiseptic, lime-water the best solvent. The inhalation of carbolised steam I consider to be of much service in promoting the separation of membranes. After the membranes have separated, the application of borax, glycerine, and carbolic acid has proved serviceable in restoring the mucous membrane to its normal state. When I find a false membrane in the larynx along with slight laryngeal symptoms, I hold myself in readiness to perform tracheotomy. Sometimes the lymphatics between the hyoid bone and the thyroid cartilage become enlarged when the diphtheritic process spreads from the pharynx to the upper part of the larynx. Retraction of the soft parts during inspiration is a sure indication of the necessity of operative proceedings. I regard tracheotomy, not, of course, as a curative proceeding, but as a means to prevent death from suffocation. Although I have a very small experience of the low operation, I have seen enough of it to prove to me, as a general rule, it ought not to be had recourse to, and that the high possesses all the advantages of the lower more difficult and dangerous one. Much harm has been done by postponement of the operation. Although cases have been recorded of recovery where tracheotomy had not been adopted, yet I think we can hardly rely on the feeble hope of recovery on such slender grounds.

During the last few years our knowledge of the pathology and treatment of diphtheria has made great advance. Though change

is not by any means synonymous with improvement, we are, I think, gradually getting out of ruts. I am sure there is not one of us who does not regard it as his bounden duty to perform tracheotomy when his patient is threatened with suffocation from laryngeal stenosis, and when there is unequivocal evidence that a membrane is present. I myself have witnessed a child throwing her arms round her mother's neck, and looking into her face in a way a child can only look, telling in a whispering, imploring voice that she is choking. Who can look passively on such a scene as this, or adopt a course of what has been called "masterly inactivity"?

Few of us now resort to local applications of caustics or to the forcible removal of membrane. Much remains still to be done, and I think our past success augurs well for the future. Careful attention to throat affections in our daily practice, a better knowledge of sanitary science, together with (when the disease has manifested itself) improved prophylactic and curative treatment, will, I feel confident, do much to lower the prevalence and fatality of this most formidable disease.

ART. XVIII.—*Chronic Follicular Pharyngitis.*^a By KENDAL FRANKS, M.D., Dub.; F.R.C.S.I; ex Sch., Trin. Coll., Dub.; Surgeon to the Adelaide Hospital; Surgeon to the Dublin Throat and Ear Hospital, &c.

I PROPOSE to bring before your notice an exceedingly common, but very intractable, disease of the pharynx. It is known by a variety of synonyms. It is indifferently styled "*chronic follicular pharyngitis*," the name which I have retained; *chronic glandular*, or *glandulous pharyngitis*; *clergyman's sore throat*, the term by which, perhaps, it is best known; *chronic granular pharyngitis*, or *laryngo-pharyngitis*, if the larynx be simultaneously involved; and *angina potatorum*. Cohen,^b of Philadelphia, adds to this already overwhelming list by calling it *chronic folliculous pharyngitis*. Some of the names given to it describe well the conditions found in the different stages of the disease. Thus, in the earlier stages, when relaxation and congestion of the mucous membrane are the main features, before the follicles have had time to take on the diseased action, it is then aptly termed "*chronic pharyngitis*." Of course it may never go beyond this stage, if the patient

^a Read at the meeting of the Dublin Biological Club, March 23, 1880.

^b *Diseases of the Throat*. By John Solis Cohen. Philadelphia. 1879.

will but use proper means to arrest it at this point; but when neglected, as it generally is, the follicles or glands of the pharynx become involved, and then we have true "follicular" or "glandular pharyngitis." The last stage, when the follicles seem to have gradually disappeared and atrophy follows on this diseased state, when the pharyngeal wall becomes glazed and shiny and ceases to pour out its normal secretion, then we have the condition which is well named *pharyngitis sicca*.

This is the order in which I believe the disease progresses. I am well aware that some authors look upon the stages I have enumerated as distinct diseases, and treat of them as such, and that in his work on "Diseases of the Throat," by Cohen, he describes an ulcerative condition of the pharynx as the last stage of *folliculous* pharyngitis, and gives to atrophic pharyngitis, or *pharyngitis sicca*, a history of its own. Yet, as I have not infrequently seen the pharynx in the transition stage, when part was distinctly atrophic and part follicular, when I could, by constant watching of the case, trace one as the sequel of the other, I think we must look upon them as distinctly connected—the one a later development of the other.

Chronic pharyngitis may be said to originate in a variety of ways, though in a large number of cases no cause can be accurately ascertained. This is mainly due to the fact that its onset is so insidious. The dampness of our climate, the sudden changes of temperature to which we have to submit, and city life, are supposed to predispose to it. Alcoholism, the immoderate use of tobacco, and chiefly the improper use of the voice, seem to have an excitant effect. Lennox Browne^a lays great stress on paroxysmal use of the voice as a prolific cause of this disease; as, for instance, clergymen who preach only on Sundays, barristers who only occasionally get a brief and address a jury—those, in short, who are only occasionally called on to make harangues. Those who are obliged to use the voice whilst suffering from catarrh, or those who have to raise their voices above the surrounding din, as officers in the field, and hawkers in the streets, are more subject to the disease than others. Cohen^b attributes its prevalence among clergymen to the unequal temperatures in which they have to speak, and more especially to the fact that so many of them have to expose their bald heads to the draughts of the church or meeting-house, and instances a case in which the throat affection was cured by the speaker

^a The Throat and its Diseases, p. 97. Lennox Browne. 1878.

^b Op. cit., p. 180.

wearing a skull-cap. Gibb^a states that acrid chemical fumes induce pharyngitis, and notes its frequency among photographers. Whatever may be the exciting cause originally, all are agreed that the causes enumerated aggravate the disease once it has been started.

In the earlier stages of this disease, the symptoms of which the patient complains are not sufficiently severe to make him seek medical advice. Perhaps the earliest symptom is a feeling of dryness, with a more or less inclination to clear the throat. Hence we have hawking and hemming, sometimes aggravated to a cough, and generally associated with a frequent desire to expectorate. Pain is not commonly complained of, but, when it is, it is generally referred to the anterior border of the sterno-mastoid "running up into the ear." This often is the first thing that drives the patient to get an opinion of his case, as he fears he is getting deaf. The voice in the early stages may be a little husky, but it more frequently is unaffected.

The physical condition of the pharynx is one of general hyperæmia; the mucous membrane is slightly raised, as though the submucous tissue were infiltrated. This is best seen on the sides of the pharynx behind the posterior pillars of the fauces. Vessels are frequently seen ramifying over the back of the pharynx. Sometimes the mucous membrane has a more dry and irritated look, and its secretion seems diminished rather than increased, but when an exacerbation takes place, or the patient "catches a fresh cold," there is a copious coating of thin transparent mucus. Such patients frequently complain of living from one cold into another.

I do not wish to dwell at any length on this period, as the doctor is then rarely consulted, and even if he be, the patient is so little inconvenienced by the throat's condition that it is impossible as a rule to persuade him to follow the necessary directions. It is to the later stages, when neglected symptoms have become aggravated, when the mucous membrane has undergone changes, sometimes impossible to eradicate, when the patient's sufferings compel him to seek relief—it is to these stages that I would chiefly apply myself as the form of the disease with which we have most frequently to deal. "It (the follicular stage) is probably started in passive hyperæmia," says Cohen,^b "of long continuance, with

^a Diseases of the Throat and Windpipe. Gibb. London. 1864.

^b Op. cit., p. 180.

initial disturbances so slight and exacerbation so gradual that the disease may be regarded as chronic, so to speak, from the very start; and it gives so little annoyance and is so rarely aggravated that the patient considers it unnecessary to solicit medical advice until it has existed for several months or several years."

The symptoms of this stage are generally well marked; there is the dryness of the throat as before, with the frequent desire to clear it. The expectoration consists of pledgets of thick mucus, sometimes muco-pus. Occasionally in bad cases the sputa are streaked with blood, especially if the naso-pharynx is much engaged and if the patient is given to hawking. There is a frequent desire to swallow; the patient frequently complains of foreign bodies being present, and it is sometimes very difficult to convince him that there is not a hair, or a tack, or a grain of oats, sticking in the throat. In rare cases there is dysphagia. The voice, which at an earlier period was simply hoarse, now becomes unequal and impaired. The hoarseness may only be found at first when singing, and then may affect only the high notes, or only the low ones, or they may all be affected. The voice "cracks" on certain notes, spasmodically passing from one register to another, and is often jerky. When the usual occupation of the patient requires exercise of the larynx, and especially when it is exerted only occasionally, these symptoms get gradually worse, and at last may end in almost complete aphonia. "The voice becomes very quickly fatigued," says Lennox Browne,* "and suffers deterioration the longer it is exercised, so that a clergyman after his third service will hardly be able to speak above a whisper, and will remain quite hoarse for a day or two." This condition may exist without any congestion or abnormal condition being discovered in the larynx. The vocal cords and the other parts of it may be perfectly healthy. In such cases the laryngeal symptoms are due to the direct irritation of the pharyngeal branches of the vagus being transmitted to the laryngeal branches. To this same cause must also be assigned the frequent cough which is a nearly constant accompaniment of this pharyngeal condition. The only general symptom which deserves special notice is dyspepsia, which is generally complained of, and this is commonly associated with constipation.

Proceeding now to examine the pharynx, the first thing which strikes one is the general hyperæmic condition of the mucous membrane, which may exist in various grades. According to

* *Op. cit.*, p. 98.

Wendt,* it is most pronounced in drinkers, and also in cases of venous stasis, always modified according to the quantity of blood in the patient. It is not uniform; the posterior wall is paler towards the middle line, contrasting well with the thickened and congested sides spreading down towards the œsophagus and upwards into the naso-pharynx. Ramifying over the parts we find enlarged and tortuous vessels, which are numerous in the deeper layers of this region. The same condition of the vessels is noticed on the pillars of the fauces and on the soft palate, generally along its border and most markedly along the sides of the uvula. This appendage itself concurs in the general condition, and is usually elongated and infiltrated, sometimes even approaching œdema. The most characteristic evidence, however, is found on the back of the pharynx, where we see irregularly studding its surface a number of projections, generally circular at the base, and whose appearance varies with the then condition of the disease. Thus, when they first make their appearance they look like clear, almost translucent bodies, the margins of which look thickened and red (see Fig. 1). They seem as if they contained a clear fluid. Later on the contents apparently become opaque, and finally the whole assumes the same thickened and red appearance which the margins had at the beginning. In some cases—rare as far as I have had an opportunity of judging—the bodies contain and may discharge a thick cream-coloured and cheesy-looking material similar to that which we see exuding from the crypts in follicular tonsillitis. It is this appearance which has led some observers, as Gibb, to describe this as a “tubercular” degeneration of the glands, whilst some others speak of it as a process of ulceration. The projections may be isolated and few, or the whole surface may be closely studded with them. When they occur in any numbers they are generally arranged in rows spreading from one side to the other, though sometimes they are grouped in a miscellaneous way. They are not all of equal dimensions, but vary from the size of a pin’s head to that of a small pea. Sometimes they enlarge, and the enlargement is usually in the vertical direction, sometimes looking as if two follicles had coalesced. The blood-vessels, which we saw distended and tortuous, seem to form anastomosing circles round each of these bodies, so that when the pharynx is thickly studded over the appearance of the mucous membrane is that of a red network of vessels, in the meshes of which these projections are situated

* Ziemssen’s Cyclopædia. Vol. VII.

(see Fig. 1). The mucous membrane between these bodies appears sunken, and is generally covered with a thick mucus more or less adherent. This sunk-down appearance is sometimes only relative, but in some cases, and always when the disease is advanced, it is due to local atrophy of the mucous membrane and submucous tissue.

The prominences are, I believe, correctly described as a hypertrophied condition of the glands or follicles, so that the disease is correctly termed "follicular" or "glandular pharyngitis." It may seem idle to lay stress on what appears to be so palpable a fact, were it not that this view is repudiated by Störk,^a who declares that these nodules are simple circumscribed masses of epithelial cells deprived of their protecting external squamous layer.

The true pathology of this state of the pharynx is, I believe, this—and the behaviour of similar follicles in other parts of the body fully bears out the view—that the long-continued and passive congestion of the pharyngeal mucous membrane leads to a slow and gradual enlargement of the glands which exist in this region. The term "follicle" is applied here indiscriminately to two distinct forms—firstly, roundish, circumscribed masses of adenoid tissue, most dense round the circumference, and which are found in great abundance in the adenoid layer of the naso-pharynx, and either isolated or in groups in the mucous membrane of the lower pharynx. These follicles are similar to the solitary glands found in other parts of the digestive tract. Besides these, the mucous membrane is studded with tubular glands, inversions of the mucous membrane, lined with epithelium and surrounded with adenoid tissue. These sometimes are lacunar, similar to the crypts found in the tonsil; and it is these crypts and tubular glands which play the most important rôle in follicular pharyngitis. No doubt the lymphoid follicles join in the general hyperæmia and subsequent hypertrophy, but their part is secondary to that of the secreting follicles. As these latter glands enlarge, their mouths swell, and finally become closed, and the clear, almost translucent, appearance which they present in the earlier stages is due to their retained secretion. After a time the secretion becomes altered by long retention, and they assume an opaque appearance near the central portion of the follicle. This altered secretion may later on undergo further degenerative changes, so that the follicles look as though they were surmounted by pustules; or, bursting, they discharge the cretaceous or cheese-like

^a Pitha and Billroth's *Handbuch der allgemeinen und specialen Chirurgia*. Bd. 3. Stuttgart. 1876.

FIG. 1

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

FIG. 2.

Drawn by Kendal Franks

Lithographed by John Falconer

material which has given rise to the term "tubercular" being applied to them.

The glands which maintain the patency of their ducts continue to discharge their secretion, but this is no longer that clear, transparent exhalation which bathes the mucous membrane in the healthy state—it is a thick, discoloured mucus, often adherent in viscid strands, and often muco-purulent. It is best seen covering in the apparently atrophied portions of the mucous membrane between the enlarged follicles, sometimes adhering to the mouths of the glands from which it has exuded. In order to examine the true condition of the pharynx it is necessary to brush off this mucus from its wall.

It is not my intention now to enter into the subject of naso-pharyngeal catarrh, or to discuss the complications which arise when chronic glandular pharyngitis spreads upwards into this region. It is rare to find a case of this disease existing for any length of time without coexisting rhino-pharyngitis. As a general rule the soft palate becomes tumid and granular, the glands at the base of the tongue become hypertrophied, as in the pharynx, and the disease may implicate the larynx, giving rise to follicular laryngitis.

When it does spread upwards, or when it has originated in the naso-pharynx, where the follicles abound, we always see thick bands of viscid mucus, or muco-pus, of a greenish-yellow colour, hanging down behind the soft palate, which have made their own way, or else have been hawked down from the retro-nasal pharynx; and with the rhinoscope this part, as well as the posterior nares themselves, are seen usually thickly coated with the same exudation.

This condition may go on for an indefinite period unchecked. It seldom lapses into ulceration, though this is the usual termination assigned to it by Cohen. If left alone, the follicles gradually lose their function, become, as it were, worn out, and atrophy. The intervening mucous membrane and the subjacent submucous tissue join in the process, and the pharynx enters on the stage known as *pharyngitis sicca*, or "atrophic" pharyngitis (see Fig. 2.)

The mucous membrane now appears at the back of the pharynx of a pale-reddish or pale-yellowish colour—sometimes even white. It is dry and smooth, generally shining as if highly polished. The granular appearance has quite gone—though sometimes a few isolated follicles may still be seen lingering behind after all their companion follicles have disappeared, a few to bear witness of the

past. When this condition has existed for some time, the mucous membrane becomes exceedingly attenuated, sometimes so thin that the fibres of the constrictor muscle underneath can be recognised through it—the redness, moreover, of the muscular striæ replacing the pallor of the mucous membrane. In cases examined *post mortem* by Wendt,^a he tells us “the mucous membrane was only $\frac{1}{100}$ th of an inch in thickness. . . . The epithelium was normal, the connective-tissue long drawn out, or arranged in waves. Racemose glands were sparse, and *follicles* were not present at all, or only quite isolated. In one case only, despite otherwise marked shrinking, numerous follicular prominences were still present. There were also slit-like depressions of the mucous membrane representing the remnants of vanished follicles.” In many cases, contrasting strongly with the anæmic mucous membrane, in which they ramify, we find dilated, tortuous, and even varicose veins. These are much more defined in this than in the earlier stages, owing to the thinness of the tissue covering them. The soft palate has frequently a similar appearance, and, as von Tröltsch^b has pointed out, the uvula is elongated and “needle-shaped,” hanging down in a relaxed condition.

The mucous secretion in pharyngitis sicca is, as the name implies, very scanty, causing a most unpleasant amount of dryness. The secretion, as far as it goes, is incrustated, firmly adhering to the mucous membrane, often very difficult to remove, and if it is pulled off with a forceps or probe, the surface underneath has a great tendency to bleed. Its colour is most frequently greenish, but it may be black or gray, from particles of soot or dust or metallic atoms being mixed with it. This condition is easily seen by the patient himself, and he not infrequently describes the masses of “skin” which he has pulled down with his finger from behind the palate. Moreover, the retention of this dry mucus in the pharynx and naso-pharynx causes it to decompose, giving rise to a most disagreeable amount of foetor, which, when the disease has spread into the posterior nares, the patient himself is unable to appreciate, but which has been made sufficiently evident to him by his friends.

The *treatment* of chronic follicular pharyngitis must be directed to the different stages, and in each stage it must be borne in mind that constitutional and local measures go hand in hand. Remembering how constantly in this disease we find derangement of the

^a Op. cit.

^b Ziemssen's Cyclopædia. Vol. VII.

digestive organs—constipation more or less being the rule—special attention must be directed to correcting this condition before local measures can avail to cure the disease; for, as Lennox Browne^a points out, in the number of cases these abnormal conditions are accompanied by disturbance of the portal circulation, and this, of course, has a great tendency to keep up the hyperæmic condition of the pharynx—if, indeed, it does not in the first instance induce it. On the other hand, gastric derangements, with all their train of symptoms, may often fairly be attributed to sympathetic action of branches of the vagus nerve.

To combat this portal stasis nothing seems to have such a beneficial action as some one or other of the natural mineral waters; and with this object the waters of Ems, Marienbad, and Kreuznach have been strongly recommended. For home use, Friedrichshalle, Hunyadi János, or Pullna water, are most efficacious. Tonics may also be required, and may sometimes be advantageously combined with the saline waters.

The local treatment in the first or hyperæmic state, where the condition is essentially one of chronic catarrh, consists chiefly in the application of astringents. Frequent gargling, the use of astringent lozenges, and the inhalation of astringents in the form of spray, have all their value; but in the majority of cases these are not enough, and the pharynx will require to be brushed with a solution of from 15 to 30 grains to the ounce of sulphate of zinc, sulphate of copper, chloride of zinc, or other similar salt—the frequency with which such applications should be repeated depending, of course, on the requirements of the case.

In the second, or hypertrophic stage, more energetic measures are required. Merely to continue the treatment recommended in the first stage is but to tamper with the case; other measures must be superadded. Our object now is twofold—in the first place, to control the chronic catarrh which, by its undue persistence, has given rise to inflammation of the follicles, to hypertrophy of the mucous membrane, and to plastic exudation into the submucous tissue; to cause a retrogressive process in these hypertrophied tissues, or to destroy them, must be our next, but no less important, care.

Several methods have been recommended for directly dealing with these follicles. I shall only allude to the more important, and then call your attention to one which I have found in many

^a Op. cit.

cases to have almost a specific effect. Perhaps the agent most frequently employed, because it is at the hand of every practitioner, is *nitrate of silver*. Cohen, of Philadelphia,^a speaks most highly of it. He says there is little doubt that it is more efficacious as a rule than anything which has been suggested in substitution for it. His method of applying it is as follows:—He first carefully brushes off all adherent mucus—a proceeding which should never be omitted whatever method of treatment be adopted; he then swabs the pharynx with a solution of 40 or 60 grains to the ounce of nitrate of silver. Should this be insufficient, he gradually strengthens the application to two and to four drachms to the ounce of the salt, sometimes even using a saturated solution (equal parts of nitrate and distilled water by weight). In obstinate cases the caustic is fused on to the end of a silver probe, and applied directly to each individual follicle. Should these measures fail, he advocates the use of a fine bistoury to slit open each follicle, and then he presses a caustic point into the wound. Others have not found this salt so powerful for good as Cohen describes, nor is its use entirely devoid of unpleasant consequences. M. Duguet reported a case in the *Progrès Médical*, June 13, 1874, in which permanent discoloration of the soft palate, pharynx, face, chest, and arms had been produced by cauterising the pharynx with nitrate of silver some years before.

London paste—a mixture of equal parts of caustic soda and quicklime, made into a paste with alcohol, when required for use—has been recommended by Morell Mackenzie for the destruction of these follicles, as well as for the removal of enlarged tonsils. Though very efficacious, it is exceedingly painful, the pain lasting for many hours.

Störck, of Vienna,^a prefers gouging out these, as he thinks, masses of epithelium.

Voltolini^b and Michel have employed superficial cauterisation of these protruding follicles with loops of galvano-cautery. It is much less painful than any of the potential cauteries, and acts more promptly. They declare that strong reaction does not follow it.

Lennox Browne^c deals with these hypertrophied glands on a different principle, and, from the cases he relates, with remarkable success.

Looking upon the dilatation and varicose condition of the

^a Op. cit.

^b Galvanokaust. II. Aufl. 1872.

^c Op. cit.

pharyngeal vessels as the cause of the hypertrophy of the follicles, he proposes to hit at the root of the disease and to starve out these follicles by cutting off their blood supply. This he effects by dividing separately each vessel with a very fine galvano-cautery point. I have recently tried this method, and, when milder methods fail, it certainly yields very satisfactory results; the pain it causes to the patient is not by any means intense.

For some time past I have been trying the effect of the local application of pure carbolic acid, and I have not been disappointed by it. The method of using it is this:—The pharyngeal wall having been brushed clear of mucus, a pharyngeal probe is covered with a moderate sized piece of cotton wool and dipped into the acid, previously dissolved by a gentle heat. This is then applied to the pharynx, care being taken to avoid as much as possible the fauces. Some pressure is used over the follicles.

The carbolic acid acts both as a caustic and an irritant, and while it gradually destroys the follicles it stimulates the blood-vessels to contract, and so diminishes the general hyperæmia. Of course the caustic action induces inflammation, but this is never intense and soon subsides. The follicles seem to diminish in size rapidly, and the patient almost after the first application experiences much improvement. Again, carbolic acid has a most decided anæsthetic effect. This is of great use in cauterising the pharynx, for the pain is rarely of longer duration than a few minutes. I have generally found that its application twice a week is quite often enough. When first I began its use it was on cases in which I had been using chloride of zinc (60 grs. to the ounce), iodine, iodoform, &c., for varying periods, and the immediate benefit experienced from carbolic acid has greatly encouraged me to continue it. I will not now weary you by detailing cases in which it has been successful. I will only add that some of my colleagues at the Throat Hospital have also put it to the test in follicular disease of the pharynx, and have expressed their satisfaction with the results.

In the third or atrophic stage the treatment requires considerable modification. The secretion is now scanty, dry, and adherent; this must be removed, and the membrane stimulated to a healthy action. To attempt to brush off or tear off these dry crusts at the back of the pharynx, which spread often up into the naso-pharynx, does much harm. They can be effectually softened by inhalations, such as compound tincture of benzoin with a minim of aldehyd to

divided by the knife. The ascending aorta was seen to be tolerably dilated, and somewhat atheromatous. There was also some dilatation of the transverse portion of the arch, but not so much as of the ascending. At the commencement of the descending aorta was found an aneurism, fusiform in shape, and extending for about four inches down the vessel. This was filled with rather loose fibrinous clots, and was firmly adhering to the vertebral column, which formed the posterior wall of the cavity. The bodies of the fourth, fifth, and sixth dorsal vertebrae were deeply eroded—the first-mentioned one to a greater extent than either of the other two. As is usually the case when erosion of vertebrae takes place from pressure of an aneurism, the intervertebral discs were seen to stand prominently forth. On slitting up the aorta and left ventricle in the usual manner, a delicate cord was observed extending from the corpus Arantii of the left anterior semilunar valve across the vessel to the opposite wall. The œsophagus was found to be flattened out on, and adhering to, the right aspect of the sac, and compressed by it against the left bronchus, and between these two tubes a communication was discovered. The opening was large enough to admit an ordinary-sized cedar writing-pencil, and was situated close to the bifurcation of the trachea, and pierced that portion of the bronchus where there is a break in the continuity of the cartilaginous rings. The main bronchi of both lungs were filled with a muco-purulent secretion, and their mucous lining injected. The lungs were engorged, and patches of a kind of passive pneumonic infiltration were manifest here and there throughout their substance. This condition was especially well marked in the upper lobe of the right lung, which was very resistant to the touch, and was almost in that state known as gray hepatitis.

I think it will be readily granted that the symptoms noticed in this case were certainly but little calculated to assist the clinician in diagnosing a lesion which, according to the best observers, is one at times most difficult of detection—I mean aneurism of the descending aorta.

The absence of pulsation* (which, however, is often absent in these cases) and of murmur, taken in conjunction with purulent vomiting, dysphagia, and an area of interscapular dulness, would seem to indicate an intra-thoracic tumour of a non-aneurismal character, but most probably an abscess situated in the posterior mediastinum, which, having pressed upon, and eventually having burst into, the œsophagus, was discharging its contents through this tube. This, I believe, actually was the view taken of the case by at least one medical man who had seen the patient

* Sibson gives the per-centage of the cases in which this sign exists as twenty-six.

during life, and, indeed, from the account I received of the symptoms before I made the *post mortem* examination, I was inclined also to look upon it in this light. However, the necropsy dispelled all these surmises in a very satisfactory, and, perhaps I may be permitted to add, an unusual manner. The most interesting and prominent points which arrest the observer's attention in the perusal of the short clinical history, are—(1) the dysphagia, (2) the vomiting, (3) the nature of the matter ejected, and (4) a “systolic click,” as described by Dr. Edis, heard over the aortic area. When illuminated by the light of the pathological anatomy of the case, these symptoms have an intense interest for the student of thoracic disease.

Dysphagia, occurring in cases of aneurism of the descending aorta, is a not very frequent symptom, existing, according to Sibson,* in but 8·7 per cent. of the cases (forty-six in number) tabulated by him. Rare, however, as is the occurrence of dysphagia, a communication between the œsophagus and portion of the respiratory tract, produced by the pressure of an aneurism, is by far less frequently met with. In a careful search through the annals of the London Pathological Society and several other sources, I have been able to discover only one example of such a lesion depending on this cause. This case I came across whilst lately perusing Dr. Habershon's work on “Diseases of the Abdomen.” There was an aneurism of the ascending aorta, which ruptured into the pericardium, one of the descending, pressing on the œsophagus, producing dysphagia and a communication between the œsophagus and, as in our case, the left bronchus. Dr. Habershon thus describes it:—“The aneurism [of the ascending aorta] extended as far as the commencement of the left carotid; below the left subclavian was another small dilatation; at the centre of the œsophagus was a slough, and an opening had been formed into the left bronchus; there was no communication, however, with the aorta.”^b

The author does not mention if there was purulent vomiting or secondary affections of the bronchi and lungs, so we presume that these lesions were absent.

It is of common enough occurrence to find an aneurismal sac communicating directly with the œsophagus or some part of the respiratory tract, and terminating fatally either by one copious

* Medical Anatomy.

^b Pathological and Practical Observations on Diseases of the Abdomen. By S. O. Habershon, M.D. Third Edition. P. 117. London, 1878.

discharge of bright arterial blood or by successive and moderate gushes, thus slowly, as it were, bleeding the patient to death; but, as I observed above, a secondary opening between the œsophagus and the main air-passages, produced by pressure of an aneurism—or, indeed, of any other kind of intra-thoracic tumour—is, at least as far as I have been able to ascertain, of extremely rare occurrence.

The symptoms which were apparently referable to the œsophagus as their primary source—(α) the dysphagia, (β) the vomiting, and especially (γ) the character of the ejected matter—when read by the light of the necropsy, become quite clear, intelligible, and very interesting. The pathological sequence of events, taken in its probable order of occurrence, was:—(1) Compression of the œsophagus between the aneurism and the left bronchus; (2) adhesive inflammation of the external coats of the œsophagus and left bronchus, proceeding on to (3) an ulcerative process, and (4) the formation of an opening of communication between them. Before the thorough establishment of this opening there would, doubtless, be difficulty of swallowing, owing to narrowing of the œsophagus from compression of the sac, and vomiting from irritation. The *muco-purulent vomiting* did not commence till after the establishment of the fistula between the œsophagus and left bronchus, and was a direct consequence of this; and its onset was probably marked by violent and distressing symptoms, such as hacking, troublesome cough, retching, and symptoms of general bronchial irritation. Thus, during the patient's attempts to swallow and his attacks of vomiting, some portions of fluids or solids would be drawn by inspiration, or, perhaps, by direct regurgitation, into the bronchi, not only of the left, but also of the right lung. This set up intense bronchitis, with puriform secretion, passive congestion of the lungs, and gave rise to patches of a form of passive pneumonia from the blocking up of bronchial tubes here and there—it may be by small portions of food sucked in till they came to tubes through which they could no longer pass, and which would thus become blocked up. There was evidence of all this found at the *post mortem*. The purulent matter vomited came primarily, I believe, not from the œsophagus or stomach, but was the secretion of the bronchi pumped out by the retching and vomiting, and not coughed up in the ordinary manner. Thus we have the rare occurrence of a secretion from the bronchi finding its way out through the gullet, and presenting features likely to puzzle the observer in determining its primary source and cause. According

to this view it will be seen that all the most marked symptoms depended on the fistula.

Having thus briefly discussed the most important symptoms of this case which depended on pathological lesions, I shall proceed to an examination of the origin of "the peculiar clicking sound heard over the aortic area"—a physical sign which owed its existence to a congenital cause. This phenomenon, doubtless, was produced by the cord that was discovered extending from one of the semilunar valves to the opposite wall of the aorta. Such a cord would be very likely to produce a sound of this character, and, in the absence of any other abnormality likely to account for it, we must regard it as the originator of the "click." The impingement of the blood-current upon it would give rise to vibrations, and thus produce the phenomenon. The presence of a cord of this nature is of rare occurrence, and, I think, must be regarded as congenital, it having developed and grown with the heart; for it seems to be quite an impossibility that in the constant current of blood forward during the systole, and in the diastolic recoil, such a cord, the product of pathological changes, could arise from one of the valves, and, throwing itself across the aorta, could become attached to the opposite wall, in the same manner as a spider extends its silken meshes from twig to twig on a calm autumnal morning.

I dare say some of its readers will recollect a note which I published in this Journal about two years ago,^a on a congenital band stretching across the origin of the aorta, of a somewhat similar nature, but differing in its being much stronger and thicker, and not arising from any of the semilunar valves, but having both ends inserted into the wall of the vessel just above the line of the valves. In this latter case I had not an opportunity of determining the nature of any abnormal sound that may have existed over the aortic area, but suppose it to have been somewhat of the same kind as that observed in the case I am describing, but of a louder and more pronounced character.

Whether bands of this description are rare or not I am not aware, but, at all events, I have never come across a description of one in the course of my reading (as far as I can recollect), and a pretty extensive search through medical literature has failed to discover one.^b

^a May, 1878.

^b If any person who may read this should happen to know of an account of any such band, I should esteem it a great favour his communicating to me where it is to be found.

ART. XX.—*On Some Important Therapeutic Effects of Chlorate of Potassium.*^a By ALEXANDER HARKIN, M.D.

It is generally known, I believe, to the members of the Ulster Medical Society, that I have for many years been an earnest advocate of the use of chlorate of potassium in the prevention and treatment of disease, and that I have already on two occasions submitted the results of my experience to the consideration of the profession at large. I have written, as it were, two monographs—each one devoted to a special phase in the curative action of the remedy. My first paper, read before the Society, and published in *The Dublin Quarterly Journal of Medical Science* for November, 1861, was entitled “The Use of Chlorate of Potash in the Treatment of Consumption and Scrofula.” The second, upon “Chlorate of Potash in the Hæmorrhagic Diathesis,” was communicated to the British Medical Association, at its meeting in Cork in August, 1879, and detailed at length my experience of its curative agency in cases of epistaxis, hæmophilia, purpura hæmorrhagica, hæmaturia, menorrhagia, hæmatemesis, hæmoptysis, and hæmorrhage from the rectum.

My intention at present is to demonstrate the beneficial effects of the remedy in another department of medicine. My great difficulty, however, is to make a selection, as there is not, in reality, a single class in the nomenclature of disease that I might not refer to in proof of the salutary influence of this drug. When I state, as the result of my observation extended over a great many years, that this salt exercises a most potent influence on all maladies dependent upon defective nutrition, secretion, excretion, aëration, and molecular metamorphosis—that it possesses the power of developing vital force in weakened constitutions, of retarding the degeneration of the tissues, and of frequently controlling the too rapid advance of senility, due to climacteric conditions—the difficulty of selection will be at once apparent.

Before proceeding further, I may be permitted to refer to its *modus operandi*, its dose and mode of administration. My theory is that, being principally composed of two elements indispensable to the formation of healthy blood—viz., oxygen and potassium, its administration, especially where one or other of these substances is deficient, tends to improve and elevate the condition of the circulating fluid, upon which the health of every organ of the body

^a Read before the Ulster Medical Society, Tuesday, March 2, 1880. [For the discussion on this paper, see p. 485.]

depends. When a solution of chlorate of potassium is taken into the stomach, a portion—as is the rule with iodide and nitrate of potassium—is carried off by the kidneys; another portion passes by diffusion into the liquor sanguinis, the textures, the blood globules, and white corpuscles; a third may be supposed to part with three equivalents of oxygen in the blood, leaving behind chloride of potassium, which may be detected in the urine as well as in the blood, of which it is an important element.

After its continued use the patient experiences an increase of appetite—of nervo-muscular force; all the bodily functions are performed with greater ease, the colour improves, and the flesh-producing power is manifestly augmented, as evidenced by increased weight, the character of the blood itself being altered by an addition to its fibrin and plastic qualities. When required for internal use, I generally order it as a saturated solution, say one ounce of the salt to twenty of water, of which for adults one ounce three times daily either before or after food. Most useful by itself, yet its efficacy in arresting disease, in chlorotic or hæmorrhagic diatheses, may be greatly enhanced by the addition of iron in one of its many forms, the most convenient being the *tr. ferri perchlor.* With the permanganate of potassium it forms a most excellent gargle and mixture in sore throats with diphtheritic exudation, and for the healing of ulcers; it also forms a good base for many pectoral mixtures. As to the tolerance of the drug, I know not of any remedy so generally well borne. I have prescribed it for patients of all ages and conditions with wonderful success and advantage, and, while I can safely state that thousands have been benefited by its use, I can count upon my fingers the number that it has disagreed with. I have met a few cases in which it produced unpleasant symptoms, and some with peculiar idiosyncrasies, in whom it had to be dispensed with altogether. Like other salts of potassium—the acetate and the nitrate—it occasionally acts, though in a less degree, as a diuretic, but this condition is far removed from nephritis—a disease which Jacobi asserts to be frequently produced by its use. In all my experience I remember but one case that at all approached this condition—it was that of a young German lady, a subject of phthisis, living in Hollywood, who, while taking the chlorate, certainly suffered most painfully for a number of hours from strangury, but who recovered by the ordinary means of stupes, hot baths, &c. Dr. Cutter, a very able American physician, told me of a case that occurred to him while crossing in a

transatlantic steamer, that recovered with difficulty after taking only ten grains of the salt. As a contrast to this, I may relate the case of a strong young man who, having been supplied with a gargle containing an ounce of the salt, through mistake drank the whole at a draught, and did not experience the least inconvenience in consequence. Whilst, therefore, I do not give any credence to the exaggerated statements which have lately appeared in the medical journals, I do not think that the prescription of this remedy should pass, like cod-liver oil, out of the control of the profession, and become a merely popular medicine, but that it should be given with caution, although without reserve, under medical supervision.

Perhaps among its many valuable qualities none is more remarkable than the rapidity with which its application as a lotion heals up the injuries due to burns and scalds, so often by ordinary treatment both tedious and troublesome to cure. It is quite surprising how soon the healing process commences after the application of the lotion, and the raw surface is covered by the formation of new skin. This rapid improvement takes place not only when vesication is extensive, and the cutis more or less destroyed, but also in the more severe cases, where not alone the cutis but the subcutaneous tissue is destroyed, and even when ulceration is present after the separation of the eschars—the condition which makes the treatment of burns and scalds so troublesome to hospital surgeons, and the wards allocated to their treatment so often foul and offensive.

After a few applications of the lotion a zone of new skin appears proceeding from the circumference, day by day speedily narrowing the denuded surface, till at last the wound is healed. The chlorate of potassium lotion appears to possess the power of favouring the secretion of fibrin in peculiarly plastic condition, and of hastening the formation of new tissues, and thus completing the reparatory process, and the healing of sores. I shall try to illustrate my position by an example. About twelve months since a member of the Royal Irish Constabulary received a scald upon his right hand, producing a painful blister, and he applied to me for advice. My friend, Dr. J. W. Browne, happened to see him at this visit and subsequently. I directed the man to puncture the blister, and remove the cuticle by a poultice, and then to apply a lotion composed of five grains of chlorate of potassium and one ounce of water, every four hours; twenty-four hours after its application he returned, already the

healing process had commenced, and a border of newly-formed cuticle, one half inch in breadth, presented itself. Next day a further narrowing took place, and so on, till at the end of five days the cure was complete.

Another case, on a larger scale, occurred in the Male Industrial School, then located in Donegall-street, about seven years since—that of a little boy who stumbled when lifting a pot of boiling broth, and received the contents down his back, which blistered him from the neck to the nates. On visiting him I directed the back to be poulticed for twenty-four hours with bread and water, and after the removal of the detached cuticle the surface of the scald to be dressed with lint, and the lotion of the same strength as above to be frequently renewed, and a mixture of the saturated solution to be given in half-ounce doses three times daily. This case comported itself like the former one, the cure was most rapid, and the lad was able in seven days to put on his clothes and resume his ordinary avocations.

CASE III.—I shall only refer to a third case—that of a brewer's man, who was scalded by the overflowing of boiling wort, and blistered on both thighs. In his case the greater part of the blistered surface healed within a week, but some ulcers, with troublesome granulations, required the lotion to be doubled in strength before finally yielding.

An important item is to apply the lotion three or four times daily, to add the permanganate if any offensive discharge arises, and to maintain the strength of the patient by the administration internally of large doses of the salt.

Closely allied to the condition of a scald or burn is that of a sloughing ulcer, due to the application of a blister in enfeebled constitutions. This ailment is usually treated with the *lotio nigra*; the chlorate lotion will be found to be more rapidly successful in giving a healthy cast to the surface of the wound. I shall relate a remarkable case in proof of its power:—

CASE IV.—About ten years ago I was in attendance upon three children of a family living in Murray's-terrace, suffering from scarlatina with diphtheritic exudation and high fever. The two elder patients had required blisters on the throat, which healed without any trouble; not so with the third, a girl of six years, for, twenty-four hours after its removal, the blistered surface assumed an unhealthy appearance; it then began to slough, and soon the healthy surrounding skin became similarly affected, and the slough extended from the chin to the sternum, and from

the ears to the collar bones; but the slough took another direction, and after the skin and fasciæ of the neck it destroyed the platysma myoides and the cellular tissue on the left side, leaving the external jugular quite isolated and the sternocleido-mastoid muscle as well defined as on the dissecting table. The external jugular being quite occluded I snipped it off with a pair of scissors. The disease still proceeded, and the external carotid was laid bare, and was observed pulsating vigorously at the bottom of the wound. Matters now looked serious, and I thought it right to ask Dr. Murney to give me the benefit of his valuable counsel. He advised the application of my favourite remedy, chlorate of potassium, ten grains to the ounce as a lotion; the result was, that in twenty-four hours one-half of the right side of the neck was healed, and in two days more it was completely cicatrised, the healing process proceeding from the circumference to the centre. The left side, with the deep-seated slough, also healed completely within five days, leaving the child unable to laugh without distortion of the features from the destruction of the skin muscle on one side and the absence of antagonism. However, after about a year, some principle of compensation seemed to be established, and the deformity disappeared altogether.

In the treatment of caries of the vertebra of the neck, by the injection of a solution of the salt I have had on two occasions the greatest advantage; and in cases of strumous abscesses and sinuses treated by injection the cure is generally very rapid—of course in every case the constitutional requirements being attended to by the internal administration of the salt.

CASE V.—About twelve years since I was called to see a patient in Lagan village, a married woman, nursing her first child, but in a very delicate, wasted condition, due to a profuse discharge which came from her left shoulder-joint, of a scrofulous nature; there were several openings about the insertion of the deltoid muscle, and the drain was so debilitating that the patient appeared to be in an advanced stage of consumption. I prescribed the internal use of the chlorate of potassium, and injected the sinuses daily, with a weak solution of the salt. Her health immediately began to improve, and in three weeks the discharge had ceased altogether, the arm resuming its ordinary functions. I have seen the patient lately; she carries on the business of a shop in a stirring part of the town.

CASE VI.—*Mammary Abscess and Sinuses.*—In July, 1868, a lady called on me for advice. She had been suffering from an abscess in the breast for three months. Her baby was five months old, and she had never nursed. She was much exhausted, and in a very nervous condition. On examination I found that the right breast was painful

and inflamed, and that there was a purulent discharge proceeding from five openings, the outlets of five sinuses which had subsisted from the date of the original abscess. I prescribed the mixture of the ordinary strength, and injected each of the sinuses with a solution of ten grains to the ounce. When the patient called next day already one of the orifices was closed. I then injected the four remaining; next day another had closed, and by the end of five days the last sinus was permanently healed. The lady's health was re-established at once, and she has since given birth to three other children.

The effect of chlorate of potassium upon ulcers, simple, irritable, indolent, and rodent, is very remarkable. I might point to several cases at present under my care for ulcers in the leg and on the head, the results of wounds; but would merely state that they heal just as I have described in the case of burns. The hard and elevated edges of old ulcers give way to flattened and healthy ones, and the excavated surface of the sore is altered by the oxygenating power of the lotion and replaced by healthy granulations.

CASE VII.—I shall relate but one case, that of an intelligent, educated man, himself a doctor residing in Kilkenny, who applied to me by letter for advice in 1864, suffering from painful chronic ulcers, that had reduced him so much that he had to get a substitute for his dispensary practice. I have fortunately two of his letters remaining. I shall read them for you; they tell their own tale. In the first letter he says:—"I am now a week using the c. of potash internally as well as externally. There is a great change. The sore is healing, the integuments so unhealthy and breaking away are now pale and healthy looking, and the irritation for which I had to take morphia, as well as add it to the local application, is so much subsided as to enable me to dispense with the morphia locally, and to reduce the internal use from $1\frac{1}{2}$ grains to $\frac{3}{4}$ th daily. The elevated and everted glazed edges of the sores are now flattened and dipping into the ulcer. You said it truly when you mentioned that in the chlorate of potash I should find what I'd been long seeking. How can I thank you for the benefit you are doing me? Your remedy stands upon sound therapeutic principles, and is true.—Kilkenny, 5th October, 1864." He writes again, 30th October:—"I may say I am just healed; the sore is skinning ever so rapidly; I expect it to be entirely closed in a few days." Later on he writes:—"Though not quite healed, and this owing to my being obliged to undertake dispensary duty too soon, yet I have but two ulcers, the size each of a shilling. When I discontinue the chlorate internally I find I am obliged to resume it. It at once improves the aspect of the sore. I have since used it in leucorrhœa and in purpura, in combination with tr. mur. ferri, as you suggested, and with most

beneficial results. In a case of the latter disease, a child was under other treatment for months, the first 8 oz. mixture of chlorate with iron astonished its parents, the result was so manifest."

This poor gentleman was finally cured and restored to usefulness and health, and with his case I conclude.

ART. XXI.—*Note on the Remittent Fever of the West Coast of Africa, with Remarks on Treatment.* By WILLIAM ALLAN, L.R.C.S.I.; First Prizeman in Practical Anatomy; Prizeman in Anatomy and Physiology; and formerly Prosector of Anatomy in the Queen's College, Belfast, &c., &c.

DURING a recent visit to the western portion of Africa, including Sierra Leone, the Grain, Ivory, and Gold Coasts, Dahomey to Bonny, I had an opportunity of observing the "African Fever" and treating cases of it.

The climate of the African coast is essentially unhealthy and very humid, the atmosphere being saturated with moisture. The malarial poison has all the conditions necessary for its propagation—viz., decomposition of organised material and a sufficient amount of heat and moisture—and these conditions are specially fulfilled during and after the rainy season on the coast when the vegetable matters, having become sodden and decayed, are acted on by intense sun-heat. What the poison of malaria depends on is difficult to say, but it is interesting to note that, having once arrived on the coast, articles of clothing, hats, boots, &c., become covered over in an incredibly short time with a small plant, like, in appearance, to the *Penicillium glaucum*, which we see here forming the mould on old boots, jam-pots, &c. It is hard not to believe that the poison which generates the fever does not depend in some way on some one of these microscopic plants or their spores.

Newcomers are more likely to have the fever than those who have been resident for some time, and it is quite possible that there is individual susceptibility to the receipt of the poison.

As regards the most unhealthy parts of the coast—though liable to the fever on any portion of it—Bonny is considered to be one of the worst, if not the worst, because it is situated far up a river and surrounded by great quantities of swamp-land. Lagos is also said to be unhealthy; it is worthy of note that it is the only place on the coast where the horse will live.

Sierra Leone—commonly termed “the white man’s grave”—is stated to be much improved during the past ten years—due, likely, to the introduction of improved sanitary arrangements.

Pulmonary affections are said to be very fatal among the natives on the coast, and that it is so need not be doubted considering the dampness, want of medical attendance when ill, and exposure, as most of them confine their dress to the ordinary loins-cloth. Dropsy (cardiac) and diseases of the womb are also stated to be of frequent occurrence, and I have noticed skin affections to be common.

With regard to the natives themselves they are singularly well developed, especially about the chest and arms, appear in a great measure free from physical deformity, but in from 5 to 10 per cent. the umbilicus varies in size from a hen’s egg to that of a large orange. This condition of matters probably results from a weak state of the abdominal parietes in that part, or improper treatment of the cord after delivery. Many of them, doubtless, contain intestine; some of them I examined formed true herniæ. Many of the men and women file the central incisors (upper) so as to leave a hole; the reason they give for this is to allow of the passage of a small tube for administration of liquids during illness.

I will now state a few facts regarding the fever and its treatment. One of the first symptoms of a person being attacked with the fever is “cessation of free action of the skin,” it becoming dry and burning; gastric disturbance and complete anorexia; headache is present, frontal and occipital, and there may be some shivering, but the cold stage is of short duration, the temperature rising rapidly. In some the exacerbation occurs in the morning, in others at midnight. Sleeplessness, intense thirst, and delirium are present as the fever advances.

I treated the cases as follows, attending to complications as they arose. It is advisable sometimes to administer an emetic—always a free purgative—in the liquid form, so as to get the bowels acting as soon as possible. When free action had occurred I gave the patient ounce doses of a mixture containing liquor ammoniæ acetatis, spiritus ætheris nitrosi, and potassæ nitras—allowing him to drink freely of hot weak tea during the intervals of administration—till the skin was acting. Diet—soup four times daily, and if circumstances called for it, the administration of an ordinary sedative draught of chloral hydrate and bromide of potassium. If dangerous symptoms or collapse set in, I found champagne to be the most efficient remedy,

giving 3 v. doses every hour till the patient rallied; and, as in one case (that of a Spanish sailor), when a serious comatose condition ensued, small blisters to each temple and cold lotion to the head was found useful. For the intense thirst I gave a weak solution of citric or hydrochloric acid, for if the patient is let drink freely of water he will bring on disturbance of the bowels, which will be found a great disadvantage as regards the hygiene on board ship. Attention to hygiene and good ventilation are, of course, necessary, especially when the patient is confined within certain limits.

It is not of any use to give quinine during the course of the fever, or while it is commencing. I gave a 10-grain dose to commence with as soon as the remission occurred, with 5 gra. every fourth hour till the patient was cinchonised. I found the diaphoretic effect of tea to be greater than that of coffee—hence its administration above.

The *rationale* of the above treatment may be explained as follows:—Assuming the contagium to be inhaled or swallowed, it may be possible in the early stage of first attacks to get rid of some of the poison by emesis or by clearing out the alimentary canal. Certainly the latter is desirable with a further view of getting rid of any irritating materials, especially bile, and afterwards to maintain an easy action of the bowels during the fever. Some improvement generally takes place when the surface becomes moist, and patients express themselves as feeling better, so that it is desirable to obtain, if possible, free action of the skin. With this view I gave the above mixture, with hot tea, in preference to coffee, for the reason stated. Further, I believe that the malarial poison acts principally on the nervous system, and that tea not only excites the action of the skin, but sustains the nervous system during the fever. Dr. Hooker (quoted by Ringer) says:—"Tea seems to have a very decidedly stimulative and restorative action on the nervous system, which is, perhaps, aided by the warmth of the infusion," and such has been my experience. As regards the use and effect of stimulants, I tried brandy in one case with the effect of, I believe, "exciting the nervous system." I am satisfied of the efficacy of champagne if low symptoms ensue.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Pathologie Clinique du Grand Sympathique, Étude basée sur l'Anatomie et la Physiologie. Par le DR. A. TRUMET DE FONTARCE.
Paris: J. B. Baillière et Fils. 1880. 8vo. Pp. 373.

THIS is a curious book, of a class still not uncommon in French medical literature, although happily less common now than it was some years ago. The author professes to found his work on anatomy and physiology, but it is an anatomy and physiology entirely elaborated out of his own mind, and which is in no way supported by the facts of experiment and recent scientific observation. We learn with some dismay from the introduction that we are not to look on this large, closely-printed volume as an independent work, but merely as a chapter, as it were, of the second edition of the author's "Elements de Médecine Clinique." What, however, is left to be treated of in the other parts of these Elements, we are at a loss to discover; for in the work before us we find every disease, from plague down to nervous or dyspeptic flushing of the face, considered and disposed of to the author's satisfaction, as being a disease of the sympathetic nerves and ganglia. We do the author the justice to say that he expresses some doubt as to the nature of plague, although the fact stated by "one of the speakers" at a recent meeting of the Academy of Sciences, that the anatomical lesion in this disease consisted in "granulations seated on the branches of the sympathetic," is considered to be a guide for future investigation; but cholera, progressive muscular atrophy, asthma, fever, and, in fact, almost all the diseases to which flesh is heir, in his opinion, unquestionably owe their origin to disturbed action of the ganglionic system of nerves.

We shall translate one or two short passages, taken pretty much at random, in order to show our readers the character of the work. We have no doubt these will satisfy their curiosity; but, if not, we must refer them to the work itself, for we confess it is beyond our

power to give any detailed analysis of the contents of a book so theoretical and inconsequent as this seems to us to be:—

“*Active Neuroses or Irritations of the Ganglionic Plexuses and Nerves of the Liver, Spleen, Pancreas, and Salivary Glands.*—Since the secretions of the glands are directly dependent on the sympathetic filaments (?), it is quite legitimate to refer the exaggerated secretion of the different organs which we have just mentioned to an accidental stimulation of these nerves. When treating of cholera and of pernicious fever, we shall see that there are grounds for referring to an excessive action of the ganglionic system, the bilious flux, and the digestive discharge (*débordement digestif*), which are always met with in the former of these affections, and accidentally in pernicious fever, where it assumes the bilious, choleraic, or dysenteric form. Mercury exercises on the nerves of the salivary glands an action of the same order. Analogy permits us to suppose in certain cases a similar excitation of the nerves and of the secretions of the pancreas; but here the secreted product falls less directly under the observation of the senses, and is less easy to detect. The swelling of the spleen, which plays so large a part in the history of intermittent fevers, may it not be also, as pointed out by Bouilland, the effect of an exaggerated blood fluxion, due to the irritation (!) of the numerous ganglionic nerves distributed to the spleen? This is the interpretation which we shall give of the phenomenon.”—Page 170.

Again, speaking of migraine:—

“In order to grasp its origin, let us consider for a moment the functions which devolve on the plexuses and ganglia, which compose the system of the sympathetic nerves. Here, again, physiology enlightens pathology. It is a well-established fact that the sympathetic governs the functions of the viscera of organic life. The stomach, the intestines, the liver, the lungs, the heart, are animated chiefly by the ganglia and filaments of this nervous centre, and it is no longer doubtful that it is on these ganglia, and particularly on the solar plexus, that the influence of emotions and the affections (*sentiments affectifs*) makes itself felt.”—Page 174.

The author then goes on to quote from Bichat, and to describe, in support of these views, the various visceral derangements which follow emotional disturbances—among others, “the spasmodic vomiting which often succeeds all at once the loss of a dear object, the news of a misfortune, or any kind of trouble determined by the passions.” We remember reading a French novel recently, in which the heroine, having been abruptly forsaken by her lover, was straightway seized with uncontrollable vomiting. We do not know

whether English girls, under similar circumstances, manifest the same symptoms, as we have not ourselves met with such cases. Perhaps in France the sympathetic nerve may play a larger part in the economy of the people than it does with us; but we are sure that we have as yet no physiological or pathological basis on which to found such a superstructure as that which has been raised in the work before us.

RECENT WORKS ON ANTISEPTIC SURGERY.

1. *The Treatment of Wounds.* Clinical Lectures by SAMPSON GAMGEE, F.R.S.E., Surgeon to the Queen's Hospital, Birmingham, &c. London. 1878.
2. *On Absorbent and Antiseptic Surgical Dressings.* A Clinical Lecture by SAMPSON GAMGEE, F.R.S.E., Surgeon to the Queen's Hospital, Birmingham, &c. London. 1880.
3. *Chirurgie Antiseptique Principes Modes d'Application et Résultats du Pansement de Lister.* Par le Dr. JUST LUCAS-CHAMPIONNIÈRE, Chirurgien de la Maternité de l'Hôpital Cochin; Membre de la Société de Chirurgie; Redacteur-en-Chef du Journal de Médecine et de Chirurgie Pratiques.

WE have grouped together the works above named, as they represent the two most common views on Lister's system of antiseptic surgery. Mr. Gamgee's clinical lectures on the treatment of wounds form one of the best text-books that could be put in the student's or indeed in the practitioner's hands; they are clear, concise, and eminently practical. They will furnish, in addition, to anyone who wavers between the old and new schools of surgery, to anyone who hesitates to adopt strict antiseptic surgery, a valuable help. They will aid in his work where strict antiseptic conditions cannot be obtained, and by the line of reasoning along which they will lead him must necessarily incline him to perfect his practice by advancing to complete Listerism. The opening lecture of the series discloses the whole *raison d'être* of the book and its supplement:—

“Lecturing here in 1867 I told you that I looked upon water dressing as favouring suppuration and opposed to healing. Experience has only added confirmation to this opinion, and it is now many years since I applied water dressing or a poultice to a wound which I wished to heal. Yet in the last edition of his work, Mr. Erichsen seems scarcely less

fond of water dressing than (following immediately in Robert Liston's steps) he was, when Joseph Lister and myself acted as his earliest dressers, now seven-and-twenty years ago."

Mr. Gamgee and Mr. Lister have each advanced beyond their master. "They which run in a race run all, but one receiveth the prize." Mr. Gamgee runs and runs well, but he is slow to admit that Mr. Lister runs better. At once Mr. Gamgee throws down the gauntlet, and enters the lists:—

"The exclusion of air from a wound has been dwelt upon as eminently conducive to its rapid cicatrisation. Others teach that air may beneficially flood a wound, so long as it is deprived of those noxious germs which are believed universally to pervade it. Air, say the disciples of this school, is only injurious because swarming with countless fertile germs; destroy them, and the air loses its malefiance.

"If the germ theory and the practice based upon it be correct, the sooner it is accepted the better; but if its foundation be in great part illusory—if it be unequal to explaining and be actually inconsistent with many of the results of practice—if it be unnecessarily complicated, and if it tend to exclude or to supersede, without good reason, principles and methods which are demonstrably simple, safe, and sound, it will be impossible to accord to it the assent which has been claimed for it. Experience must decide the issue."

So Mr. Gamgee writes in 1878. This year he publishes his lecture "On Absorbent and Antiseptic Surgical Dressings," the very title suggesting to us the idea that he either has come to think with Mr. Lister, or otherwise that he desires to adopt a title suggestive of Listerism.

We fail to find in Mr. Gamgee's first series of lectures any proof that the foundation of the germ theory is illusory, or that it is inconsistent with the results of practice. Its practice, when intelligently worked, does not present unnecessary or extreme complications, while so far from excluding or superseding the simple, safe, and sound principles on which Mr. Gamgee works, it utilises and extends them, adding only to them a greater certainty of success. "Experience must decide the issue," says Mr. Gamgee in 1878. We now look to his recent lecture for this decision, which its title suggests the author has arrived at. He takes as the basis of his lecture two cases of operation for strangulated hernia, dressed after his own method; in the first the operation was followed by immediate relief, and in ten days the wound was

healed. Such results have been obtained by many modes of dressing. Mr. Gamgee, in his first series of lectures, quotes Mr. Hey's cases of injury of joints treated by poultices of bread and water, which establish this fact.

Passing on to the second case of operation put forward as an example by Mr. Gamgee, we find that although every detail of his dressing has been carried out by himself, the patient's temperature rose rapidly to 105° , the wound became inflamed with diffused redness extending beyond the dressings, and that the evacuation of a quantity of pent-up pus from the wound was followed by relief of the symptoms with a fall of temperature, pulse, and respiration to the normal. Here to the suppuration of the wound, and its confinement by the mode of dressing, the fever was clearly to be referred, for symptoms of peritonitis were absent, and the relief of the wound tension set matters right. Surely this case suggests that if the author had avoided the accident of suppuration by antiseptic precautions, and if he had not relied so fully on his elastic pressure applied over the wound without provision for drainage, he might have had a result as favourable as in his first case. We do not find here any fact that militates against antiseptic surgery—only proofs that with a most elaborate, and, perhaps, most efficient mode of dressing, but one which fails to provide antiseptic security, grave inflammatory accidents arise, induced largely by the tension resulting from pressure unguarded by suitable drainage. Mr. Gamgee is far too partial to his own ideas to adopt or even to study Mr. Lister's method—at least, if he has tried or studied it, he does not give us his experience. He is too jealous of the success obtained by his old fellow-student to help to apply the test of experience which he says can only decide on the merits of the germ theory applied in practice.

Dr. Just Lucas-Championnière presents to us in his second edition of the "*Principles of Antiseptic Surgery*" a most complete manual of the subject. He has been the steady advocate of the system in Paris, and the evidence his second edition affords, both in itself and in the details of Continental experience which it furnishes, is conclusive of the extensive adoption of the system abroad. Of this adoption we have had independent proofs in the current periodical literature and otherwise. No more satisfactory evidence, however, can be given than the issue of the second edition of a manual devoted to the practice of antiseptic surgery

exclusively. The period of mere novelty has passed, and the publishers' test, a second edition likely to sell, has been reached.

In this manual no department of surgery is omitted; the operator who hesitates to carry his practice into new grounds from some ill-defined fear that it may be hurtful or useless, will here find examples sufficient for his guidance and encouragement. He will find, too, that each and every attempt to extend or usefully modify the working of Lister's system is fairly and clearly discussed. We heartily commend the work to our readers as the most complete manual obtainable, and one that brings the working of the system, with its improvements and helps, arrived at up to the present year, clearly and fairly before the reader. We would even dare to commend its study to Mr. Gamgee.

An Examination of the Usual Signs of Dislocation of the Hip; also, an Inquiry into the Proper Mode of Procedure when Dislocation of the Hip is accompanied with Fracture of the Femur. By OSCAR H. ALLIS, M.D., Surgeon to the Presbyterian Hospital Philadelphia. 1879.

THE interest of Dr. Allis' paper consists in the illustrations it affords of the uncertainty which attaches to the diagnosis of injuries of the hip, particularly in cases where exceptional circumstances are present. He discusses four such injuries. The first he considers an instance of dislocation of both hips occurring simultaneously, in consequence of a fall of a bank of earth on the back of a man stooping at his work. His three remaining cases are each fractures of the shaft of the femur complicating dislocation of the head of the bone. On the first case the author bases his "examination of the usual signs of dislocation of the hip," which—under the conditions of double and different dislocations of the hips of the same individual—he asserts "may be, for the most part, wanting, or so modified and subdued as to be of little diagnostic value."

We cannot help expressing a regret that the facts of the case are published so incompletely as to raise doubts in our mind as to the correctness of the author's diagnosis. The evidence of dislocation on the right side was the presence of deformity such as is usually admitted to mark dislocation on the dorsum ilii, and the fact that after an interval of eighty-one days, without treatment, the reduction by manipulation was accomplished with singular facility. The limb when reduced was proved to be an inch shorter

than its fellow. Doubt being expressed that the reduction under these circumstances had been effected, the verity of the dislocation was tested by its reproduction and re-reduction. Doubts now arose as to the opposite hip, its motion in the direction of adduction being limited; in it an obturator dislocation was suspected and set aside after an examination under ether. After a time (the author does not state how long) these doubts re-arising, again an examination in full consultation, under ether, was made, with the result that each surgeon present held a different opinion. So far the record of the case seems to furnish but indifferent evidence in favour of the double dislocation, or, indeed, of any dislocation at all right or left.

The remaining facts are furnished in these words of the author:—

“So great a discrepancy led to a more careful examination, and the result was that all agreed upon the dislocation; but it was not until some days later, when we attempted the reduction, that Dr. Porter and I were assured there was no fracture.”

The inference we are forced to draw in the absence of any further account of the case is that an attempt at reduction was made and failed.

From the features of the limb and the failure in the attempt at reduction, the author, as far as we can determine, concludes that dislocation into the obturator foramen was present; yet he concludes that on the opposite side the features of the limb and the facility of its reduction established the presence of a dislocation on the dorsum ilii. The only absolute result of the case, as far as it is reported to us, is that the right limb remained shorter than its fellow by an inch—a fact that may be explained without assuming the presence of a dislocation of either hip.

Of Dr. Allis' cases of fracture of the shaft of the femur complicating dislocation, two have been the subjects of errors of diagnosis—the hip dislocation escaping notice; in the third the dislocation was recognised and reduced by Mr. Cooke, of the Royal Free Hospital. Of the American cases Dr. Allis appears to have seen but one. His personal experience of the injury is therefore hardly sufficient to induce us to accept his dicta regarding diagnosis and treatment with implicit faith, but his paper will furnish a most useful guide to any surgeon called on to deal with rare injuries of the kind it discusses.

THE DOCTORS'
SOCIETY FOR
MEDICAL
OBSERVATION

PART III.
HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.*

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1. On the Toxic Principles present in certain kinds of Whisky.
2. On Houses in which Zymotic Diseases recur.
3. Poisoning by Coal Gas.
4. Influence of Tobacco-smoking upon Health.
5. Influence of Climate on Phthisis.
6. Passage of Sewer Effluvia through Water-traps.
7. Communication of Animal Poisons by means of Hair.

I. ON THE TOXIC PRINCIPLES PRESENT IN CERTAIN KINDS OF
WHISKY.

Whisky of excellent quality is easily procurable at fair prices in respectable shops in all the large, and in many of the small, towns of Ireland; but the article vended under the name of whisky in most of the low class of public-houses—especially in villages—in booths and stands at racecourses and fairs, and in roadside *shebeens*, is, as a rule, of very inferior quality and unfit for use.

My position as Public Analyst for the greater number of Irish counties has caused a large number of specimens of whisky to be submitted to me for examination, chiefly under the provisions of the "Sale of Food and Drugs Act, 1875," and Act amending same, 1879. The general results of this examination are, perhaps, worth recording.

The term alcohol is commonly applied to a liquid which con-

* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of this Journal.

stitutes the intoxicating principle of wine, beer, brandy, and other *spirituous* liquors. It is, however, used by the chemists generally in relation to a large class of bodies which have a constitutional resemblance to the common alcohol. There are several groups of alcohols, and ordinary alcohol is classed with those termed monatomic, of which twelve have been discovered or formed up to the present.

The simplest in composition of the monatomic alcohols (or of any alcohols) is wood spirit, or methyl alcohol. It is composed of one atom of carbon, four of hydrogen, and one of oxygen (CH_4O). Next to it in simplicity of constitution is common, or vinic alcohol, also termed ethyl alcohol ($\text{C}_2\text{H}_6\text{O}$). This compound, mixed with water, constitutes spirit of wine.

Ethyl alcohol is formed from the sugar of certain fermenting liquids; and at the same time one or more of three other alcohols are often formed, in quantities varying according to the nature of the fermenting material. These alcohols are—propyl, or trityl alcohol ($\text{C}_3\text{H}_8\text{O}$), butyl alcohol ($\text{C}_4\text{H}_{10}\text{O}$), and amyl, or pentyl alcohol ($\text{C}_5\text{H}_{12}\text{O}$). There are two forms of propyl alcohol—normal

propyl $\left(\text{C} \begin{Bmatrix} \text{CH}_2\text{CH}_3 \\ \text{H}_2 \\ \text{OH} \end{Bmatrix} \right)$ and pseudo-propyl $\left(\text{C} \begin{Bmatrix} \text{CH}_3 \\ \text{CH}_3 \\ \text{H} \\ \text{OH} \end{Bmatrix} \right)$. The former is

found in most fermenting liquors containing sugar. It is a liquid which boils at 96°C .; its specific gravity is 0.8205 at 0°C .; its odour is rather agreeable, but its flavour is very pungent.

Butyl alcohol exists in four forms, one only of which—namely,

isobutyl $\left(\text{C} \begin{Bmatrix} \text{CH}(\text{CH}_3)_2 \\ \text{H}_2 \\ \text{OH} \end{Bmatrix} \right)$ —is found in certain fermented liquids.

Its specific gravity is 0.8032 at 18°C ., and it boils at 110°C .; its odour is somewhat overpowering.

Amyl alcohol $\left(\text{CH} \begin{Bmatrix} \text{C}_2\text{H}_4\text{OH} \\ (\text{CH}_3)_2 \end{Bmatrix} \right)$ is an oily liquid which boils at 130°C ., and has a specific gravity of 0.825 at 0°C . Its odour is oppressive and persistent, and its flavour is acrid, burning, and choking. The inhalation of the vapour excites coughing.

In addition to these alcohols, which are formed together with vinic alcohol in the manufacture of brandy, whisky, and similar liquids, minute quantities of other alcohols, including the varieties

termed hexyl ($C_6H_{14}O$) and octyl ($C_8H_{18}O$), are developed, but they are not of much importance, owing to their minuteness.

As ethyl alcohol boils at $74.4^\circ C.$ ($173^\circ F.$) it is the first to come over when fermenting liquids are distilled. The other alcohols are the last to come over; consequently, the last portions of the distillates in the whisky and brandy distilleries contain by far the greater portion of the higher terms of the alcohol series. The very last portion (termed in the whisky distilleries *faints*) is in great part composed of a liquid termed *fusel oil*. Now fusel oil is a very variable article. It is a compound containing chiefly water, ethyl alcohol, and amyl alcohol, but the other alcohols just mentioned are present in it in large proportions, as are also various other compounds.

Although the higher terms of the alcohol series have much higher boiling points than ethyl alcohol, yet in practice it is found that they distil over in part with the latter. If the distillation is carried on at too high a temperature, a still greater proportion of amyl, propyl, and butyl alcohols passes over. This is particularly the case in the preparation of the illicit spirit termed *poteen*, and which I have found to contain very large amounts of amyl alcohol.

From the results of my examination of many hundreds of samples of whisky sold in Ireland, I have come to the conclusion that the sale of whisky containing the alcohols rich in carbon is exceedingly common. Let us see what is the effect of these alcohols upon the animal economy. I shall here consider the properties only of propyl, butyl, and amyl alcohols.

Eulenberg^a gave 40 drops of amyl alcohol to a kitten; in seventeen minutes the animal's heart began to palpitate violently, and in twenty-two minutes there was complete anæsthesia. The animal did not quite recover till the following day. According to Rabuteau,^b 1 part of amyl alcohol in 50 parts of water causes anæsthesia in frogs in twenty minutes, death supervening two hours later. He found that butyl and propyl alcohols were possessed of strong toxic powers. Dujardin-Beaumetz made numerous experiments, in order to determine the toxic action of the alcohols. He considers that 8 grammes (about $\frac{1}{4}$ oz.) of absolute ethyl alcohol per kilogramme (2.2 lbs.) of the weight of a man's body a poisonous dose. The poisonous dose of other alcohols, under similar circumstances,

^a Gewerbe Hygiene, p. 440. 1876.

^b Rabuteau. Ueber die Wirkung des Äethyl, Butyl, und Amyl Alkohols. Schmidts Jahrbuch. Band CXLIX., 233. 1871.

is stated to be 1·7 grammes of amyl alcohol, 2 grammes of butyl alcohol, and 3·9 grammes of propyl alcohol. I am disposed to consider that Dr. Dujardin-Beaumetz has certainly not under-estimated the relative poisonous effects of amyl and ethyl alcohols. Dr. Cros,* of Strasbourg, made experiments on himself, in order to determine the toxic action of amyl alcohol. He found that a dose of from 10 to 15 centigrammes caused, in a few minutes, intense frontal or temporal headache, and a sense of constriction; 4 grammes caused a general depression of the system, in addition to cerebral symptoms; difficulty in standing, meteorism, and diarrhœa occurred. From 8 to 16 grammes caused a jerky, rapid, profound respiration, intense cerebral symptoms, repeated vomitings, and a profound depression long continued. It is doubtful if symptoms equally severe would be produced by doses of ethyl alcohol only five times greater. Injected into the stomach, amyl alcohol causes intense reddening, and sometimes complete removal of patches of the mucous membrane of that organ. Upon the mucous membrane of the mouth and throat it exercises a similar action.

Of the few reliable determinations of the amount of amyl alcohol in whisky, one is by Dr. Dupré, who found in a specimen of Scotch whisky 0·19 per 100 parts of ethyl alcohol. This quantity, if it represent only the effect of five times its weight of common alcohol, could not be very poisonous. I am certain, however, that the low qualities of whisky sold in Ireland often contain from 0·1 to 0·3 per cent. of amyl alcohol; and I am further of opinion that the deleterious action of fusel oil is not to be measured merely by its intoxicating effect upon the system. Rabuteau, who repeated and modified some of Cros' experiments made upon himself, found that the minute quantity of 10 centigrammes of amyl alcohol, dissolved in a litre of beer, produced dryness of the throat, *d'ivresse triste*—which perhaps may be translated as “drunken melancholy”—and occasionally diarrhœa. Now, such symptoms could hardly be produced by 50 centigrammes of absolute common alcohol, added to half a litre of beer. The results of Rabuteau's experiments appear to show that the toxic properties of amyl alcohol are fifteen times greater than those of common alcohol.

When whisky is properly prepared it is almost perfectly free from a liquid termed *aldehyde* and from empyreumatic oils. The alcohols are all convertible into acids by oxidation—ethyl alcohol

* *Action de l'Alcool Amylique sur l'Organisme* (Thèse pour le doctorat en Médecine). Par Cros, Strasbourg. 1868.

into acetic acid, amyl alcohol into valeric acid, propyl into propionic acid, &c. There are, however, intermediate bodies formed before alcohol becomes an acid, and these bodies are termed aldehydes and ketones. The aldehyde of common alcohol is formed by the action of a molecule of oxygen upon two molecules of alcohol ($2\text{C}_2\text{H}_5\text{O} + \text{O}_2 = 2\text{C}_2\text{H}_4\text{O} + 2\text{H}_2\text{O}$). Common, or ethylic, aldehyde is a volatile liquid, possessing a pungent, suffocating odour, and a rather disagreeable flavour. It has a very low boiling point—namely, 22°C .

Dr. Magnus Huss found that two or three centigrammes of empyreumatic oil from badly-prepared alcohol caused a burning sensation in the stomach. A larger dose than 20 centigrammes (about 3 grains) could not be borne. Professor Isidore Pierre, of Caen, has pointed out the toxic properties of aldehyde. The substance acts powerfully upon the animal economy.

Aldehyde generally occurs more or less abundantly in the first distillate in the preparation of beetroot and potato spirit. Krämer and Pinner attribute the formation of the aldehyde to the action of the oxygen with which the alcohol comes into contact in passing through the charcoal filters. On the other hand, Kekulé considers that it is produced by the oxidising action of the nitrates which are generally largely present in the fermenting liquids. It is undoubtedly present in the malt washes of the whisky distillery, generally in insignificant quantity, but often in large proportion, owing to the bad management of the fermentation process. We know that occasionally oxidation to the extent of producing acetic acid occurs in the worts.

In some experiments which I made five years ago in distilling grain spirit to test the capability of a new form of still, I found the quantity of aldehyde coming over in the first rush of spirit so large that it almost took my breath away when I stood near the stream of spirit issuing from the still.

I am disposed to believe that it is to the presence of aldehyde, as much as of amyl alcohol, that the acrid flavour of new and especially of badly-prepared whisky is due. The remarkable improvement which whisky undergoes by storage is attributed to the conversion of the amyl alcohol into pleasantly-flavoured products. It is probable that it is disposed of in this way, though the experimental proofs in support of this theory are weak. Nothing is, however, more probable than that the aldehyde disappears on storing the whisky in wooden vessels, owing to its tendency to become oxidised and the very low temperature at which it boils—

namely, 22° C., or 71·6° Fahr. The pure compound is so volatile that it is difficult to preserve it in warm weather.

I have examined a large number of specimens of whisky collected by the constabulary in various parts of Ireland—chiefly at fairs, on racecourses, and in low public houses. A small proportion—not more than 10 per cent.—were of superior or fair quality. The remainder consisted of two classes of low quality—firstly, new whisky; secondly, whisky composed more or less of what is termed patent-still whisky, and which is but little superior in flavour to spirit of wine, or to the so-called *silent* spirit imported from the Continent, which is merely a mixture of pure alcohol and water.

Patent-still whisky is chiefly manufactured in Scotland, and is largely imported into Ireland for the purpose of being mixed with Irish pot-still whisky. The former has almost no flavour; the latter is rich in flavouring ingredients, and therefore the two whiskies make, to use a trade term, a good “blend.” Patent-still whisky undergoes no important improvement by age, as the pot-still whisky does. Patent-still whisky may be drunk just as well when new as when old, but the pot-still variety contains so many ingredients, and in such large quantities, when new, that it is not safe to use it until it has been stored for two or three years. In order to improve whisky by age it is necessary that it should be stored in wooden vessels. In the course of two or three years a large amount of alcohol evaporates through the pores of the wooden vessels in which it is contained, and whisky which at first was raw, acrid, and pungent, is found to be mild, well flavoured, and fragrant. These changes are generally attributed to the oxidation of the amyl alcohol,* which is always to be detected in freshly-made whisky. I believe that to a very sensible extent they are due to the disappearance of aldehyde out of the whisky.

I have subjected to examination a large number of samples of new whisky for the purpose of ascertaining the presence of aldehyde, and in the great majority of them this liquid was found in very large quantities.

There is, so far as my experience enables me to assert, a very large amount of new whisky sold in Ireland. This liquor is unwholesome, chiefly on account of the quantities of fusel oil and, I would add, aldehyde which it contains. By storing this whisky for two or three years it would, for the most part, be

* Valerates and acetates of amyl and ethyl are stated to be present in old brandies and whiskies.

deprived of its noxious qualities by the escape of aldehyde and empyreumatic volatile oils, and by the conversion of the alcohols other than ethylic into fragrant ethers and acids. Much of the whisky would always remain bad, though improved somewhat by age, owing to being prepared from bad or musty grain, or from worts in which the acetic fermentation had proceeded to an injurious extent. The ill effects of the raw and perhaps otherwise bad whisky sold at fairs, races, and in other places, are testified to by thousands of observers. Persons have frequently told me that they have been made ill by drinking a single glass of whisky procured in country places, at races, &c., and which they found acrid and burning to the taste. Strong men are known to become intoxicated by drinking a couple of glasses of whisky of bad quality, though they could consume three times the quantity of old mild whisky with apparent impunity. All through Ireland it is believed that very small quantities of the low qualities of whisky suffice to produce intoxication; and the fierce fights which occur even amongst friends at fairs, races, &c., when large quantities are absorbed, testify *forcibly* to the "maddening" effects of new whisky.

In 1874, when examined before the Committee of the House of Commons, relative to the working of the Acts relating to the adulteration of food, I stated that it was desirable to prevent the removal of whisky for consumption from the bonded warehouses until it was two years old. Mr. O'Sullivan, M.P. for the county of Limerick, introduced into Parliament, during its last session, a Bill for the purpose of preventing whisky from being removed from bonded warehouses for consumption until it was at least one year old. The Bill was withdrawn after the first reading, owing to the lateness of the session, but it is to be hoped that it may be reintroduced early in the new Parliament. Such a measure is

reputation of poteen in this respect. Indeed, I have met with samples of poteen so acrid that it is surprising how anyone could relish such stuff. The amount of amyl alcohol in the poteen sent to me for examination proved to be 0.23 per cent. It also contained a large quantity of aldehyde. I reported that it was a spirit quite unfit for use. The gentleman called upon me, and I learned from him that he had been in the habit of drinking from two to three glasses daily of this liquid (for which he paid £1 per gallon!), being under the impression that it was a wholesome beverage. He had also given it to his wife and sons. Sometime after they began to drink the poteen the members of the family gradually began to suffer from various symptoms, affecting both mind and body. In the case of the parents these symptoms assumed, within six months, a serious aspect. It only then occurred to them that the poteen might possibly have had something to do with these changes in the condition of their health, and, accordingly, the specimen of it was sent to me for analysis.

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quiet, but with far more settled melancholy, which had a religious tinge, from which her husband was quite free."

Whisky is rarely adulterated in Ireland (except with water), unless the "blending" of patent-still with pot-still whisky is to be considered an adulteration. The alleged adulteration of whisky with blue-stone, sulphuric acid, petroleum, methylated spirit, and various other deleterious substances has not been substantiated. A little flavouring matter is generally added to even the oldest and best whiskies, but not for a fraudulent purpose. I have met with sweet spirits of nitre in two specimens of whisky. Burnt sugar is used to give whisky a pink colour, in imitation of the hue which it acquires by being stored in sherry casks. A liquid composed of wine, acetic ether, and tincture or wine of prunes, or other fruit, is sometimes added to new whisky, in order to cause it to acquire somewhat the flavour of old whisky.

Whisky is sometimes sold so weak as to be from 25° to 55° underproof.

The following letter, addressed to me by Mr. Bell, Principal of the Chemical Department of the Inland Revenue, shows that whisky is not much adulterated:—

"The result of our experience entirely corresponds with your own, not merely in former years, but during the past one. This will be seen from the following extract from my Annual Report, recently presented to Parliament:—

"Complaints of alleged serious adulteration of whisky by publicans in Ireland, especially at fairs, not infrequently are brought under the Board's notice by magistrates and others living in different parts of the country. Usually the supervisor of the district is ordered to send up samples to test the question. Several samples in the most recent case were obtained from publicans selling whisky at Ballyshannon fair. These were carefully analysed, but no evidence of adulteration was obtained, with the exception in one of the samples of the presence of a trace of pungent matter resembling cayenne pepper.

"The cause of the suspicions we believe in a great measure to be the use of new spirit containing an excess of fusel oil and other natural impurities."

II. HOUSES IN WHICH ZYMOTIC DISEASE RECURS.

In Dublin it has been found that various contagious diseases reappear several times in the same house. In some courts, as well as houses, it has been noticed that smallpox, scarlatina, and other

zymotic diseases periodically make their appearance. The narrow lane running from South Great Brunswick-street to Townsend-street is an example of this unhealthy kind of court. It consists of a poor class of houses, with but little space in the rear of some of them, and no open space behind the others—overshadowed by ranges of loftier houses, causing deficiency of light and stagnation of air. In this court Asiatic cholera made an early appearance during its last visitation, and here one of the first—if not *the* first—cases of smallpox occurred in the epidemic of 1871.

All the houses in Tennis-court have had all kinds of zymotic diseases in them, and the whole place seems to be saturated with contagia. It is evident that disinfection, as generally performed in tenemental houses, and the occasional application of whitewash to them, as enforced by the sanitary authorities, are often inoperative in rendering such houses as those in Tennis-court healthy dwellings. The only remedy for such an unsanitary state of things as that which prevails in purlieus like Tennis-court is to raze the houses. This is the course which I have recommended to be done in this particular instance, and which recommendation I have reason to believe will be acted upon next year.

When a house appears to be seriously affected by the contagium of one or more of the zymotics, it certainly should be cleared out and subjected to a close sanitary inspection. It will probably be found that the house-drains are defective—that the water-closet is out of order—that there is an ill-kept *petit* and an offensive ash-pit, or some other sanitary defect—perhaps a great many defects—present. Such a house subjected to a thorough disinfection, and having all its interior wall surface hot lime-washed, will, when put into proper repair, be probably as healthy a house as any other of the same class. The duty of the sanitary authority is clear in the case of notoriously unhealthy houses, the sanitary conditions of which are obviously bad. Occasionally, however, contagious disease reappears in a house which is well provided with sanitary accommodation, and in good repair—perhaps not long built. What is to be done in such a case? The landlord asserts that the house is in perfect order, and examination of the premises fails to disprove this assertion. I have met with some cases of this kind which have rather embarrassed me. A house in Francis-street, superior to most houses in that locality, and not long built, had several cases of smallpox in it one after the other. After each case the room in which the patient had been located was disinfected and

lime-washed, but these processes did not apparently prevent a recurrence of the disease. Now, in the case of this house, would it not be justifiable to have it compulsorily cleared of its inmates and their belongings, and the whole house subjected to thorough disinfecting and general cleansing? Would it, in fact, not be desirable to close up for a time every house in which—during, say, one year—three or four successive cases of infectious disease occurred? The objection to this is that the people and the furniture and clothing of an infected house are dispersed, and may distribute infection through half a dozen other localities. It is most important that a record be kept of the cases of contagious disease in every house within the jurisdiction of the sanitary authority.

It would be very desirable if there were a refuge established for persons obliged to leave their dwellings for a short time until the latter were purified. It is difficult, if not impossible, to thoroughly disinfect rooms unless the tenants are kept out of them for a few days. When a case of infectious disease occurs in a tenemental dwelling, and the patient has been restored to health, removed to hospital, or buried, how is the room which he had inhabited to be purified properly if the family who occupy it are walking about on the stairs, in the hall, or in the street, until they can reoccupy their dwelling? Very often the family are taken into their neighbours' rooms, and in that way spread disease.

If there were a few small houses prepared for the reception of families whose rooms were being disinfected, I think very few people would object to go into them for a day or two—in fact, they would be obliged either to use them or seek lodgings elsewhere, if there were a determination to do the disinfecting work in such a manner that the room could not be occupied for at least forty-eight hours. If such refuges were in existence, there would be no objection to close houses in good repair, but known to be infected with zymotic poison, until they were subjected to thorough purification. The mere fact that smallpox, or typhus fever, or scarlatina, was known to have repeatedly occurred in them, would bring them under the provisions of the 107th section of the Public Health Act, as being "in such a state as to be a nuisance, or injurious to health." I do not propose at present to enter into such considerations as the cost of the refuge suggested to be erected, or its size. I merely wish to bring under notice the urgent want of such a place, and the difficulty of dealing with houses which, though apparently in a proper sanitary state, are yet, from some

cause, not healthy dwellings. The matter is worth considering. I do not think that the Public Health Act gives, in direct terms, any power to sanitary authorities to found, or contribute to the maintenance of, houses for the use of people whose tenements are being disinfected. It might be held that as they are empowered by the 100th section—also the 149th section of same Act—to “take precautions in case of any infectious disease” in lodging-houses, the precaution of providing a refuge such as that which I have indicated would be a proper one. When, during times of epidemics, the boards of guardians became sanitary authorities, with exceptional powers, I have no doubt they would have the power to provide refuges.

At my suggestion the Public Health Committee have recently had constructed a movable wooden house for the reception of families whose rooms are undergoing disinfection. Certain structural defects have rendered it unworkable; these are being remedied, and when the movable house is in proper order it will get a fair trial, and every effort will be made to induce people to enter it.

The foregoing observations were made before a meeting of the Society of Medical Officers of Health, Dublin, on December 10th, 1879, whereupon it was unanimously resolved by the Society:—

1st. That it would be desirable to establish refuges, such as the President had indicated.

2nd. That it was necessary to temporarily close houses apparently in good repair if zymotic disease appeared frequently in them.

III. POISONING BY COAL GAS.

Dr. E. Vallin, the eminent sanitarian, in a paper published in the *Revue d'Hygiène et de Police Sanitaire* for January 15th, 1880, states that the intense cold which prevailed in France last winter (in some places the temperature fell below 0° Fahr.) had not up to that date produced any new form of disease. Dr. Vallin incidentally alludes to some facts mentioned by Dr. Napias, which serve to illustrate the danger attendant on the laying of gas pipes beneath the floors of inhabited rooms. Dr. Napias was called upon to attend a porter who was found in his room in an asphyxiated state. Though the patient's condition was manifestly caused by inhalation of coal gas, no escapement of gas could be detected from the pipes in the house. The floor having, however, been pulled up, a gas pipe was found beneath it, which was followed up to the point of

its junction with the main pipe, where an escape of gas was detected. The cause of the leak appears to have been a displacement of the ground by the intense frost. The gas had found its way through the space between the pipe and the ground in which it was laid, and entered into the room, in which it soon produced nearly fatal consequences. Upon the same night which witnessed the accident just described, a publican residing upon the opposite side of the street was greatly disturbed by the odour of coal gas in his house. The same odour was also strongly felt by a grocer whose dwelling adjoined that of the porter. His wife and children suffered from violent headache and malaise.

Accidents similar to those have occurred in England, and on one occasion was attended by loss of life.

Dr. Alexander Layet, of Lyons, has lately recorded the deaths of a woman and her child from inhalation of coal gas. A leak had occurred in the street main, and the gas which escaped, being unable to pass upwards through the ground, which was frozen, diffused through the more porous underground soil into the cellars of many adjacent houses. The woman, her husband, and their child, were found insensible in their house, and the man alone recovered.

The first accident of this kind recorded is that described by Professor Tourdes, of Strasbourg, in 1840. There are attached to the gas mains syphons, with which the water that accumulates in the mains is, from time to time, drawn off. The water having completely dried up in one of these syphons, the gas passed through it from the main, and the supersoil being at the time frozen, the gas diffused into the cellar of a house situated only fifteen feet distant from the syphon. The inmates of the house—six in number—were fatally poisoned by the gas.

In the case of Rovereto (Review of Hayem, 1877, page 550), reported by Ruggiero Cobelli, three persons (a mother and her daughters) were poisoned by coal gas which passed into the house out of the ground. The gas had escaped from a fissure in the street main, and had been sucked into the house by the heated air in its interior. The gas passed through eighteen yards of soil, and even penetrated through stone walls.

A similar accident occurred at Albi (Tarn), where three persons were poisoned—two of whom recovered—by coal gas, which escaped through a syphon, attached to the street main, and made its way through the soil and a thick wall into the house.

It is chiefly in winter, and especially during severe frost, that

these accidents are most likely to occur. This is due to the greater quantity and pressure of the gas in the mains, and to the impervious texture of the layer of soil next the atmosphere, and the high temperature of the interior of the houses causing an insuction of air (both overground and underground air) into the houses. As preventive measures in relation to such accidents, Dr. Severin Caussé suggests that gas companies should have accurate plans of their network of pipes, showing conspicuously the points at which the syphons are placed, so as to permit of their frequent examination. Dr. Layet suggests that the external part of the mains and their larger branches should be put in connexion with the lamp-posts or with the open air.

The fatal accidents from inhalation of gas have in general been preceded by cases of malaise, nausea, vomiting, giddiness, faintness, lassitude, &c. It was only when the fatal climax came that the importance of these symptoms became apparent.

Pettenkofer has collected some observations, showing that symptoms at first attributed to typhoid poisoning were really due to inhalation of coal gas. It is, therefore, important that due attention be given to the discovery of the cause of such symptoms, which, instead of being the result of inhalation of foul air from water-closet or sewer poison, is, in some cases, the product of coal gas poison. The state of the weather, the proximity of gas mains, the precise nature of the symptoms, are all points to be carefully considered by the medical man when called upon to attend in cases where it is probable that a noxious matter of some kind has been taken into the system.

Carbon monoxide is invariably present in coal gas, of which it is the chief toxic agent. The action which carbon monoxide gas exercises upon the red corpuscles of the blood is very characteristic, and in cases of fatal poisoning by coal gas this peculiar action upon the red corpuscles has been noticed. It is to be regretted that up to the present no practicable method for the removal of carbon monoxide gas from illuminating gas has been devised. The suggestion made years ago by Dr. Angus Smith, to use caustic soda mixed with sawdust for this purpose, has not had a fair trial. Dr. Layet suggests the use of cuprous chloride dissolved in strong hydrochloric acid for the purpose. It would be a desirable step for the great gas companies to combine and offer a substantial prize—say £1,000 or more—for the discovery of a practicable method for the removal of carbon monoxide from illuminating gas. Deprived of

this noxious and useless constituent, coal gas would not, even if mixed in pretty large quantities with the air of houses, be a poison.

IV. INFLUENCE OF TOBACCO-SMOKING UPON HEALTH.

In the *Revue d'Hygiène* for November 15th, 1879, Dr. Decaisne observes that the excessive use of tobacco causes in some subjects intermission of the beats of the heart and radial artery. Out of 88 smokers who came under his observation during a period of three years, he found 21 cases of intermittent pulse, without any organic lesion of the heart. He states:—

1st. That none of the subjects who came under his observation had organic disease of the heart.

2nd. That none of them were in a state of health favourable to the development of intermittence in the beats of the heart.

3rd. That in nine cases the complete abstention from smoking tobacco was sufficient to restore the cardiac rhythm and the system to their normal condition.

He therefore says that the abuse of tobacco produces in some subjects a condition which he terms *nicotism* of the heart, which is manifested by intermissions in the beats of that organ and in the pulsation of the radial artery. It is sufficient in some cases to suppress or diminish the use of tobacco in order to stop or diminish the irregularity in the heart's action.

The malign effects of tobacco-smoking upon children aged from nine to fifteen years are more evident. In 27 out of 38 children under Dr. Decaisne's observation, he noticed irregular pulsation and want of rhythm in the cardiac beats. The author concludes:—

1st. Though it is difficult to detect it, yet the noxious effects of tobacco-smoking on children are unmistakable.

2nd. The use, even in moderation, of tobacco by children induces alteration in composition of the blood, and the more striking appearances of chloro-anæmia—i.e., pallor, inanition, *bruit de souffle* of the carotids, palpitations, and irregular beating of the heart, diminution in the number of the red corpuscles of the blood, and dyspepsia.

3rd. The remedial treatment applicable to anæmia and chloro-anæmia produces, in general, no beneficial effect so long as the habit of smoking is continued.

4th. Children who smoke exhibit in general an intellectual sluggishness and an inclination, more or less marked, for strong liquors.

5th. Children who give up the habit, and in whom no organic lesion is present, recover from the disorders of the system just described, and no further consequences supervene.

Observations such as those now described are made upon women under circumstances of much greater difficulty, and the numbers of facts are rather limited; yet out of 43 cases, extending over a period of 14 years, 8 exhibited the heart symptoms perfectly obviously:—

CASE I.—A lady, twenty-five years old, four years married, the mother of one child; very strong and in good health during the first three years of her married life. For a year she had heart symptoms—the organ seemed to cease to beat; great anxiety was felt; she was pale, and liable to faint; otherwise her health was good; menstruation regular; appetite excellent, though body was emaciated. The treatment—consisting of the use of digitalis, bromide of potassium, iodide of potassium, and blister over the heart—proved unavailing. The lady was in the habit of joining her husband in smoking tobacco, and on relinquishing the practice all her bad symptoms disappeared in a fortnight and did not again trouble her.

CASE II.—An actress fainted in the theatre between the acts. She stated, on recovering, that she was subject to fainting fits whenever she smoked more than usual. Her daily consumption of tobacco consisted of twenty cigarettes, and she had upon this day exceeded that number. In this case the intermission occurred every eighth or tenth pulsation. Having given up the use of tobacco, a week served to restore the normal rhythm of the heart's beats. She subsequently occasionally reverted to her old habit of smoking, and the irregular heart's action always followed in due course. In this case there was no organic or cardiac disease.

CASE III.—An unfortunate, twenty-two years of age, addicted to all kinds of excesses, suffered from irregular heart's action. She could cause the irregularity to come or to cease according as she indulged in, or abstained from, smoking.

CASE IV.—A young girl was induced to smoke by her brother, but she consumed only two, or, at most, three cigarettes twice or thrice weekly. After she had smoked a cigarette four intermissions could be detected in sixty-four beats of her heart. She gave up the habit of smoking, and her heart's action became regular.

The remaining cases do not differ from those cited; in all of them abstention from the use of tobacco was sufficient to restore the patient to health.

In the *Revue d'Hygiène* for January 15, 1880, Dr. Delaunay, in commenting upon Dr. Decaisne's paper, calls attention to the

influence of the emanations from tobacco upon pregnancy. In a poor district of Paris there is a manufactory of tobacco in which 2,000 women are employed. According to the evidence of a midwife who has attended a great number of women employed in this factory during their confinements, they are peculiarly liable to miscarriages, which they attribute to the influence of the exhalations from the tobacco. Some of the women, who are not altogether dependent upon their earnings from the factory, leave it when they become pregnant until after their confinement. One woman who had twice miscarried whilst working at the factory, left it when she was in the fifth month of her third pregnancy. Her child was born alive at the proper time, but died soon after its birth. The mother did not return to the tobacco factory, and her fourth pregnancy terminated in the birth of a healthy child, who survived. During her first three pregnancies she suffered much from obstinate vomiting—due, perhaps, to the action of the tobacco.

From these and similar data Dr. Delaunay deduces the following conclusions:—

1st. Tobacco has a pernicious influence upon the health of children and mothers.

2nd. It impairs the health of pregnant women and causes miscarriage.

3rd. It has the same noxious effect upon children—weak from their birth.

4th. It diminishes the quantity of milk and alters its quality for the worse, and, consequently, prevents the proper growth of the child, who, indeed, often dies a victim to his mother's occupation.

The conclusions of Dr. Delaunay—as to the malign influence of tobacco under the circumstances detailed—have not been fully accepted by other hygienists, some of whom consider that they are not founded upon a sufficient number of data. Dr. Brouardel considers that to have any value attached to them the statistics as to miscarriages amongst that class of women should be compared with statistics derived from observations on other classes of women.

Dr. Thevenot, who has, in cooperation with Dr. Napias, made inquiries as to the influence of tobacco emanations on the women employed in a manufactory at Bercy, was unable to find any effect produced upon pregnancy.

Dr. Laborde has made experiments with goats—animals believed

to be rather fond of the "fragrant weed." He fed these animals with tobacco, and having given their milk to other animals known to be highly sensitive to nicotine poisoning, could perceive no ill results to the latter.

V. INFLUENCE OF CLIMATE ON PHTHISIS.

Mr. William Thomson, one of the leading practitioners in Australia, and an author of no mean repute, has for many years past been engaged in investigating the supposed influence of climate on pulmonary consumption. He has published some of the results of his inquiries, and the general conclusions which he has evolved therefrom—a bulky pamphlet^a of 123 pages. Mr. Thomson, after several years' experience as medical officer of passenger ships plying between England and many parts of Asia and America, settled down to practise in South Yarra, near Melbourne, in 1854. Finding that a notion prevailed that phthisis was a disease which was greatly influenced by climate, he soon began to subject the truth of this supposition to the statistical method of proof. At that time it was almost doubted that phthisis existed in Tasmania, but the autopsy of a young lady, a native of that island, made by Mr. Thomson, showed that both of her lungs were riddled with anfractuous cavities and vomicæ. Not merely were the general public—or rather the thinkers among them—of Australia strongly of opinion that phthisis was comparatively rare amongst them, but the medical practitioners, as a body, believed such to be the case. Some years ago the Medical Society of Victoria contended that the mortality from this disease was only a little more than one-half that which it caused in England. They further considered that the rate of mortality was very low amongst persons under fifteen years, due to the comparative immunity from the disease enjoyed by those who were born in the colony. These propositions are opposed by Mr. Thomson. He has shown that the evidence in favour of the supposed beneficial effect of the Australasian climates upon phthisical Europeans is of the weakest character. "Of the host of phthisical doctors who were at one time boastfully said to be working hard at practice, and 'cloud of witnesses' in divines vigorously preaching, where are they now? Have not they all succumbed to phthisis within the five years which our tables show to be the limit to the imported disease?"

^a On Phthisis and the Supposed Influence of Climate, &c. By William Thomson, F.R.C.S., F.L.S. Melbourne: Stillwell & Co. 1879.

Mr. Thomson, referring to Dr. J. H. Bennett's advice (in 1878) to phthisical patients to settle in Australia, inquires where in Dr. Bennett's work is to be found a statement of the result of his advice? Mr. Thomson points out that Dr. Faber, who, in a recent number of *The Practitioner*, advises consumptives to go to Australia, has had himself no experience of a "single cycle of the seasons" in that island continent—in short, Mr. Thomson denies that there are sufficiently numerous cases of the effects of Australian climates on phthisical patients recorded from which to deduce any general conclusions one way or other. He himself relies altogether upon the statistics of deaths from the disease in the colony, due allowance being made for such disturbing factors as are sure to be present amongst a population rapidly increasing by immigration. The Registrar-General of Queensland, in his Report on Vital Statistics for 1877, states that the death-rate from phthisis in Melbourne and its suburbs equalled that of England. He attributes this high mortality to the sudden changes to which Victoria is liable, and believes that, were it not for these, the dry, warm climate of the country would be more favourable to persons of consumptive habits than the climates of most of the countries of Northern Europe. Mr. Thomson shows, however, that although the years 1877 and 1878 were amongst the warmest and driest on record, yet the mortality from phthisis was greater than during any previous years.

In Victoria, during the years 1876-7, 1,955 persons died of phthisis. Of these 23 per cent. were born in Australasia, 69 per cent. had resided in the colony upwards of five years, 4 per cent. upwards of two years, and 4 per cent. less than two years. These figures show that the high death-rate from consumption was not, as some persons alleged, in great part due to an influx of dying invalids from Europe.

The increase in the ratio of deaths from phthisis to the number of the population appears to be steadily increasing, and it is particularly noticeable in the case of females between fifteen and twenty-five years. Female workers in Europe are peculiarly liable to consumption during this period of life, and probably the work-room system has been only lately developed in Australasia in the larger towns. A large increase in the death-rate from phthisis has also been noticed amongst children under five years of age.

An important statistical fact quoted by Mr. Thomson shows that in 1877, out of 1,088 deaths from phthisis, 593 were of persons

who had not been born in the colony, and of whom only 24 (4 per cent.) contracted the disease in other countries.

The gist of Mr. Thomson's essay is that—making due allowance for density of population—phthisis is as prevalent in Australasia as in England. He admits that the rate of mortality from the disease is somewhat higher in the latter country, but the difference in favour of Australasia is apparently the result of its lower density of population. He quotes with approval the opinion of Dr. MacCormac, of Belfast, who regards “rebreathed” air as a common cause of phthisis, and that of Professor Paget, of Cambridge, that it is the air within the dwelling rather than that outside of it which brings on phthisis. Mr. Thomson believes that over-crowding in dwellings and workshops is the great cause of phthisis. To use the words of Dr. Farr—“The proximity of man to man the greater the mortality.”

Without doubt Mr. Thomson has made out a strong case to prove that phthisis is a highly fatal disease in Australasia, and one likely to increase in frequency as the density of the population increases. Two quotations in Mr. Thomson's pamphlet are so pertinent to the subject under discussion that it is desirable to reproduce them in closing this brief notice of his interesting *brochure*.

Mr. Haviland, in his “Geography of Phthisis,” 1875, states that “climate, therefore, *per se* cannot be considered as an exciting cause, however greatly disposed to phthisis the people may be.” Dr. Emil Muller, of Winterthur, in a book entitled “Der Verbreitung der Lungenschwindsucht in der Schweiz,” 1876, shows that there is no immunity from phthisis enjoyed by those who reside in the higher regions of Switzerland, though it is supposed, even by medical men, that phthisis is exceedingly rare in such regions.

Dr. Bennett says, in reference to Muller's statistics:—“The average mortality at different elevations is given in three heads—1. In persons whose occupations were purely industrial—principally watch and lace making—entailing confinement in workshops or at home; 2. In persons whose occupations were partly industrial, partly agricultural; 3. In persons whose occupations were purely agricultural. I here give a digest of Table XVI:—

“Average Mortality from Phthisis in the Mountain Regions of Switzerland.”

Elevation.		Feet.	Occupation.		
1. From	To	200 1,600	Industrial	-	- 10·2 per cent.
			Mixed	-	- 7·6 ,,
			Agricultural	-	- 6 ,,
2. From	To	1,600 2,300	Industrial	-	- 10·2 ,,
			Mixed	-	- 5·9 ,,
			Agricultural	-	- 5·3 ,,
3. From	To	2,300 3,000	Industrial	-	- 4·7 ,,
			Mixed	-	- 9·6 ,,
			Agricultural	-	- 2·9 ,,
4. From	To	3,000 3,400	Industrial	-	- 6·5 ,,
			Mixed	-	- 6·1 ,,
			Agricultural	-	- 3·5 ,,
5. From	To	3,400 4,400	Industrial	-	- 9·8 ,,
			Mixed	-	- 7·5 ,,
			Agricultural	-	- 4 ,,
6. From	To	4,400 5,000	Mixed	-	- 7·7 ,,
7. Above		5,000	Agricultural	-	- 4 ,,

“These tables are very instructive, and entirely negative the statements so often made of late years—that there is any special immunity from phthisis in the mountain regions of Switzerland. They show that a certain proportion of the general population in the higher mountain regions die, as elsewhere, from phthisis—the rate depending on occupations in life. Industrial pursuits, carried on indoors, in consequence, give a death-rate of 10·2, 10·2, 4·7, 6·5, 9·8, 7·7 per cent., according, no doubt, to the nature of the occupation. One of the highest factors, 9·8, is at an elevation of from 3,400 to 4,400 feet. At 4,400 to 5,000 feet, in mixed labour (partly workshop, partly agricultural), the death-rate from phthisis is 7·7.”

VI. PASSAGE OF SEWER EFFLUVIA THROUGH WATER-TRAPS.

Dr. Neil Carmichael, in a paper read before the Glasgow Philosophical Society, and published in *The Sanitary Journal*, Glasgow, March, 1880, has given us very interesting results of experiments in relation to the trapping of water-closets. In order to understand

the nature of these experiments it will first be necessary to describe briefly those made some years ago by Dr. Fergus, of Glasgow. This eminent sanitarian was the first who pointed out the frequent insuction of sewer air into houses from minute openings in the lead soil-pipes of the water-closets. He examined a large number of those pipes, and found that in numerous instances their inner surface was thickly incrustated with a white powdery substance, the metal itself being a mere film and pierced with numerous minute holes. These openings and the oxidation of the lead were chiefly observed on the upper aspects of the pipes. Dr. Fergus further ascertained that the gases from the soil-pipe passed through the water in the traps of the water-closet and entered into the atmosphere of the house. The passage of gases through water he demonstrated in the following manner:—A glass tube was bent so as to form a trap; water was placed in the bend, and ammonia gas in the lower limb. In the course of fifteen minutes ammonia gas was detected in the upper limb, having passed through the water. Similar experiments were made with other gases. Sulphuretted hydrogen passed from the lower to the upper tube, through the water in the bend, in from three to four hours; carbonic acid gas passed through the bend in an hour and a half.

The question arises from the result of Dr. Fergus' experiments—To what extent are the water-traps in connexion with soil-pipes reliable as a means of keeping sewer gases out of our houses? Dr. Neil Carmichael has answered this question, and in a very satisfactory manner. With the assistance of Mr. Dunnachie, the chemist who analyses periodically the air of Glasgow, he made a number of quantitative determinations of gases which passed through water-traps. In Dr. Fergus' experiments the air in the lower limb of his little apparatus was charged with a large proportion of the gas experimented with—probably not less than 50 per cent. Nothing like this proportion ever occurs in the air of the most filthy soil-pipe. Dr. Carmichael determined to experiment with actual sewer gas. A water-closet long in use, and provided (in common with three other water-closets) with an exceptionally foul soil-pipe, was selected. The soil-pipe was provided at its upper extremity with a ventilating-pipe two inches in diameter, and its lower extremity passed, untrapped and unventilated, into a drain which discharged its contents into the street sewer. The mouth of the latter is submerged by the river when the tide is full in. From the water-closet the basin, the pan, the iron plate covering

the receiver, and the handle and cranks, were removed; the top of the receiver and the apertures in the sides—through which the cranks worked—were sealed securely. Two leaden pipes were then passed into the receiver, projecting inwards four inches, and outwards eight inches. In the adjoining kitchen, near the sink, a metallic aspirator was established in connexion with the water-pipe. Water flowing through the aspirator caused an insuction of air through the side tube, which extended near to the water-closet. A set of glass vessels was so arranged that, by means of the suction-pipe, air from the soil-pipe could be drawn (aspirated) through them. In these vessels certain solutions were placed, and the air in the receiver was drawn through them by means of the aspirator. The air of the room was, of course, drawn into the receiver and out of it again into the vessels, otherwise there would have been pressure applied to the water in the trap; care, however, was taken to purify the air of the room before it entered the receiver, so that the impurities detected in the air, aspirated out of the latter, could only have been those that passed through the water-trap from the soil-pipe or kitchen sink.

The results obtained from these experiments, devised as above shown, proved that only very small quantities of impurities passed through the water-trap during twenty-four hours. In that time 7 grains weight of carbonic acid gas passed through the old water-closet trap, and from 7 to $10\frac{1}{2}$ grains through the kitchen trap, when the soil-pipe was open at the top; but when it was closed at the top, 32 grains of carbonic acid gas passed through the water-closet trap, and 17 grains through the kitchen trap. The amounts of ammonia which passed through were all but inappreciable—from the $\frac{1}{800}$ th to the $\frac{1}{400}$ th of a grain per twenty-four hours. The amount of sulphuretted hydrogen which passed through the water-trap was about the $\frac{1}{100}$ th part of a grain. All these quantities are perfectly insignificant and absolutely harmless.

With respect to the passage of actual organic matter through the water-traps it is not likely that it occurs at all, but should any such passage take place the quantity must be inappreciable.

These experiments clearly show that a water-trap effectually prevents the ingress of sewer air into a house. Whenever, therefore, a bad odour is observed in a water-closet, the cause must be perforations in the soil-pipe, a faulty trap, a badly-flushed pan, a defective supply of water to the closet, leakages from bad joints, bad fittings, syphoning away of the trap-water, &c.

VII. COMMUNICATION OF ANIMAL POISONS BY MEANS OF HAIR.

The Report of the Medical Officer of the Privy Council (for 1878-9) just issued, contains a remarkable paper from the pen of Dr. James B. Russell, the eminent Medical Officer of Health for Glasgow. Dr. Russell details in this paper the particulars of a large number of cases of illness—some of which ended fatally—amongst horse-hair workers. It appears that late in February and early in March, 1878, seven persons employed in the Adelphi Horse-hair Factory, Govan-street, Glasgow, became seriously ill. On the 26th February a girl, aged sixteen, became suddenly very ill just before dinner-hour. On her arrival at home she exclaimed, "I am very bad—my head and my heart!" She vomited, was excessively thirsty, and could not sleep during the first night of her illness. She perspired; her temperature was low, and her complexion became "blue, like Magenta," before her death, which occurred on the 1st March. Another female worker, aged thirty-two, usually employed in hanging up the hair ropes after they had been steamed, sickened on the 4th March, and died two days later. She had cold sweats, intense thirst, and blueness of the skin. Blood oozed from her nose immediately after death, which was also noticed in the case of the first victim. A third woman, aged twenty-six, sickened also on the 4th March, and died upon the 6th. After death blood issued from her mouth and nose. Four other persons (young women) were contemporaneously attacked by somewhat similar, but milder, symptoms; all recovered. An eighth case was that of a woman engaged in hair-carding, who returned to her dwelling, feeling unwell, on the evening of the 1st March. She observed a pimple upon the outer aspect of her left arm, but was not aware that she had pricked, or otherwise injured, herself at that point. On the 4th March she returned to work, but was unable to continue at it. On the next day Dr. Walker saw her. She had headache, and her arm was slightly swollen. On the 7th her pulse was 120, and her axillary temperature was 101° Fahr. She complained only of a pain in the upper left arm, which was much swollen. At the seat of the pimple a black spot about the size of a threepenny-piece was observed. On the 8th a crop of miliary pustules appeared over the inflamed area surrounding the black spot. In this case recovery was followed by great debility.

On the 1st of April a young woman employed in the factory, but not in the hair department, died after two days' illness.

Dr. Meighan, who attended her, certified that death was caused by malignant vesicle. Dr. Foulis, who assisted at the *post mortem* examination which was made in this case, states that "crowds of *Bacillus anthracis* were present in a clear colourless liquid in the glands of the neck, and in the anterior mediastinum down to the diaphragm. The blood also contained the *Bacillus anthracis*, but not so numerously. The *Bacillus* rods were motionless, were of a "dimly transparent pale aspect," and of the length of from two to more of the blood-corpuscles. The red corpuscles were not arranged in *rouleaux*, as is the case when the blood is normal.

The circumstances in connexion with these cases have led Dr. Russell to regard all of them as the result of poisoning by *Bacillus anthracis*. This fungus is the contagium in the various forms of disease termed charbon, anthrax, malignant pustule, splenic fever, milzbrand, &c. The disease is one primarily affecting horses, oxen, and sheep, but capable of extension to all warm-blooded animals, including man. Dr. Russell states that the proprietors of the horse-hair factory allege that this was the first outbreak of disease attributed to the peculiar nature of the industry which occurred in the place during forty years. It appears, however, that Dr. Hector C. Cameron had a girl, aged nineteen, under his care in October, 1876, who died after a few days. Her disease was malignant pustule, and she had been engaged in the Adelphi Horse-hair Factory. The earliest symptom noticed in this case was a pimple on the left lower angle of the lower lip. The pimple was like a flea-bite, had a yellow ring round it, and a dark central spot. The lip swelled enormously. About the same time a man employed in the factory died after a very short illness. The cause of death was certified to be delirium tremens; but Dr. Russell is of opinion, from the history of the case, that the man died of anthrax. In 1877 a girl employed in this factory died after two days' illness. She had a pimple upon her left cheek, which caused great pain. After death blood oozed from her mouth and nose. This case appears to have been of the same nature as those which occurred amongst the eight persons who sickened in the spring of March, 1878.

Following up his investigations Dr. Russell ascertained that three persons employed in another hair factory died—two in 1877 and one in 1878—having been ill but a short time. The symptoms in each case were such as might be expected to appear in poisoning from *Bacillus anthracis*.

It appears that the persons whose deaths are attributed by Dr. Russell to splenic fever worked chiefly or altogether upon horse-hair imported from Russia. Believing that Russian horse-hair was pre-eminently the nidus of the splenic fever fungus, two manufacturers in Glasgow have discontinued the use of hair imported from Russia.

Dr. Russell appears to have no doubt as to the occurrence of the *Bacillus anthracis* or their spores in horse-hair derived from diseased animals. He discusses the feasibility of preventive measures in connexion with this subject. There are manufacturing reasons which prevent the hair being boiled in vats until it has been carded and spun. The boiling process goes on in a late stage in the hair manufacture. Disinfection by means of carbolic acid has been used in Massachusetts, and it is stated by Dr. Walpole with good results—of which, however, Dr. Russell appears to be rather doubtful. He concludes his interesting report as follows:—

“ Apart, then, from any precautions directly operating upon the material, and always supposing the existence of generally good hygienic conditions in the work, and of special provision for the collection, expulsion and destruction of the dusty *débris* from the machine room, the following palliative suggestions may be mentioned:—

“ 1. To prevent poisoning by inhalation, respirators ought to be worn by the hands employed in the machine room, in the spinning room, also in the sorting department. It is, however, a matter of experience that workpeople will not use this simple precaution. The laying aside of respirators on every convenient opportunity, like the unlocking of Davy lamps, would undoubtedly be practised.

“ 2. To prevent poisoning by external contact, bare arms should be prohibited, and close-fitting, high-necked, long-sleeved over-garments of some close texture should be enforced, possibly supplied, left in the works, and regularly cleansed. The application of carbolic lard to the necessarily exposed surfaces—*e.g.*, of the hands and face, as suggested in the Massachusetts Report, is to be recommended. But from the well-known drying and injurious effect of carbolic acid upon the skin, females would object to use it. Therefore simple lard or camphorated oil would be preferable. Above all things, strict personal cleanliness should be observed. The free use of soap and water applied to the face and arms at each meal hour, and at the close of work, would be eminently useful. Ample facilities in the shape of lavatories supplied with all requisites ought to be provided in the work.

“ No person having any open sore on their person, or having fissures, or any other cutaneous lesion, should be employed.

“3. To prevent poisoning by deglutition, no eating or drinking within the work or keeping of food on the person or about the factory ought to be allowed. A room for this purpose should be provided, remote from the work rooms, and beyond the possibility of access of dust.

“4. Every means ought to be adopted to inform the workers of the risks attendant upon their employment, and of the nature of the contagion to which they are exposed. Caustic in some convenient form ought always to be at hand, ready for immediate application to any suspicious pimple.”

The cause and symptoms of malignant pustule and its congeners have been treated at great length by several authors—especially by C. F. Heusinger (Erlangen, 1850), Laycock (*Edinburgh Medical and Surgical Journal*, 1857, Vol. II., Part I.), Tardieu (Paris, 1862), Budd (*British Medical Journal*, January, 1863), Hodges (*Boston Medical and Surgical Journal*, January, 1869), and Hirt (*Die Milzbrand beim Menschen*, Leipzig, 1875). An outbreak of charbon is described in the Second Annual Report of the Massachusetts State Board of Health for 1871, and the subject is treated at some length by Bollinger in the third volume of “Ziemssen’s Cyclopædia of Medicine,” and the Bulletin of the Royal Academy of Medicine of Belgium for 1878.

According to Bollinger, there is generally a moderate serous, or sero-hæmorrhagic, effusion into the abdominal cavity, and sub-peritoneal sugillations in moderate amount. The retro-peritoneal and mesenteric connective tissue becomes, by infiltration, jelly-like and yellowish or reddish. Hæmorrhage from the mouth and nose immediately after death is very common. In all cases the presence of the *Bacillus anthracis* clearly indicates the nature of the disease. The contagium is found in the blood and extra-vascular fluids.

TREATMENT OF ERYSIPELAS.

HÜTER, of Greifswald, attributes erysipelas to bacteria, and successfully treats it with hypodermic injections of carbolic acid of the strength of 3 per cent. These should be used when the first symptoms appear, and then two or five injections are sufficient. At the same time the wound should be treated antiseptically, and if it have an unhealthy appearance, a solution of chloride of zinc (5 or 8 per cent.) should be employed.—*Centralblatt*, 1879.

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE
COLLEGE OF PHYSICIANS.

SESSION 1879-80.

HENRY H. HEAD, M.D., President.

GEORGE F. DUFFEY, M.D., Honorary Secretary.

Wednesday, April 7, 1880.

DR. GORDON in the Chair.

Neurosal Palpitation.

DR. BERNARD introduced a patient, the subject of neurosal palpitation. He said the case was one presenting some very remarkable features. The man had been under the treatment of Dr. Hayden, who would favour them with some observations on the case.

DR. HAYDEN said the members would observe a certain peculiar expression in the man's face, which had in itself a suggestive significance, and they would find a physical evidence of the man's condition. The man had an extremely rapid pulse, and he suffered from a palpitation of an extremely aggravated character, so much so as to interfere with sleep, and latterly rendering him quite incapable of performing his duties as a teacher. Some four months ago the man came to Dublin from Londonderry, and, after careful examination, he (Dr. Hayden) came to the conclusion that he was not suffering from any organic disease. The man's habits were regular, and he was very studious. The pulse was extremely rapid, and there were traces of exophthalmia, and some enlargement of the middle lobe of the thyroid gland. There is no renal affection. The case was interesting, in the first place, because the subject is a male; for, as they knew, the subjects of the exophthalmia of Graves' disease are, in 99 out of every 100, females. In the second place, it was peculiar in being accompanied by some loss of power in the lower extremities. It might be mistaken for sympathetic neurosis of the heart, in which there is rapid action of the heart, but it wants some of the characteristic features of the disease; the rhythm was the same. Excessive smoking or masturbation, as causes of the disease, did not exist in this case. They had evidence positive and certain in the prominence and appearance generally of the eyes, and some enlargement of the middle lobe of the

thyroid. He was under his (Dr. Hayden's) care, and he treated him with digitalis and quinine, and the patient informed him that, so far from slowing the pulse, it rather increased it; and Dr. Bernard said that he found bromide of potassium also quickened the action of the heart.

DR. JAMES LITTLE said three points struck him on examination of the case. In the first place, he noticed that elevation of the arm made a very material difference in the pulse. Another point was this, that he found that the man, when a child, had been greatly afflicted with worms. The third point was, that the man had had bleedings from the nose. That was not perhaps a point of primary importance, but it was one worth keeping in view. In a case given by Sir Thomas Watson, though not so prominent or pronounced as the present in its character, the pulse would rise to 160; it was a temporary case of neurosis, and after several fits the patient died. Examination showed that there was there an inflated and flabby heart. The present case was undoubtedly interesting, and they were indebted to Dr. Bernard for bringing it before them.

DR. BERNARD read a paper "On Diphtheria." [It will be found at p. 376.]

Before proceeding to the discussion on the paper, Dr. Bernard, in reply to a question from Dr. Corley, said he regarded membranous laryngitis and diphtheria as identical. And, in reply to a question from Mr. Stokes, as to his opinion as to the value of the operation of tracheotomy in diphtheria, Dr. Bernard said that his experience was very limited indeed. He thought, however, that a child should not be allowed to die choking, but that he should be relieved by the operation, so that death might not occur from laryngeal stenosis.

The CHAIRMAN.—I agree with Dr. Bernard as to the importance of what we may call the double line of treatment—the constitutional treatment and the local treatment, and I think one is just of as much importance as the other. As to the local treatment, the point of greatest importance is to prevent the spread of the disease downward. I can recall a most formidable case of the disease, in which recovery took place, and I attribute the recovery to the incessant care that was exercised to remove the patches of membrane, as fast almost as they formed. I remember the case of a young lady, who was very delicate, and in whom malignant diphtheria existed. In that case the rapidity with which the diphtheritic membrane formed in patches was most remarkable, and the lady's recovery I attribute to an incessant and—as it appeared to some people at the time—almost cruel treatment. She was never allowed to rest for half an hour without having the patches of membrane removed from the throat. In this way it was prevented passing down the larynx. She was greatly emaciated, and in a very nervous condition created by insomnia. She was, however, saved from

all the horrors of a death from diphtheria, and I attribute her recovery to the incessant care bestowed upon her in the way I say.

DR. JAMES LITTLE stated that he had had very few opportunities indeed of seeing cases of diphtheria, although it is well known that in various parts of Ireland—in Maryborough and other places—there had been exceedingly fatal cases of diphtheria, but from his own experience he (Dr. Little) greatly doubted that the reports of the Registrar-General, giving the number of deaths in Dublin from diphtheria, were in the least degree to be relied on. During the twelve or thirteen years he had been practising in Dublin he had seen only some five or six cases of diphtheria in the hospitals. Therefore, he considered the disease to be exceedingly rare in Dublin, and believed the returns of the Registrar-General on this point to be quite unreliable. This, he thought, was only to be accounted for by careless diagnosis in dealing with these cases, which would sometimes arise by mistaking ordinary bad sore throat for diphtheria. As to the operation of tracheotomy, Dr. Bernard had indicated what is the real knot, and the question is how to cut it. He says, very properly, that the patient should not be allowed to die of diphtheria if the operation can possibly give relief. He (Dr. Little) knew of some fatal cases in hospitals, some time ago, in which the question of performing the operation was discussed, but it was abandoned; and after death we were glad we had abandoned it, for the false membrane occupied a position far beyond the reach of the surgeon. He knew a case, too, in which both Dr. Walter Smith and himself believed nothing but tracheotomy would save the child. It was not, however, performed, and the child recovered. He had found the local application of iodoform to the false membrane over the throat beneficial.

DR. JOHN WILLIAM MOORE.—I have been attached to one of the largest epidemic hospitals in Dublin since 1872, and I cannot recall a single instance in which true diphtheria came under my observation during the past eight years. I do, however, know of cases of so-called diphtheria having been sent in, and those cases were simply cases of pultaceous exudation on the fauces in scarlatina. That diphtheria occasionally prevails in Dublin is a fact, but there is good reason to believe that most of the deaths returned by the Registrar-General as due to diphtheria are really caused by scarlatina anginosa or maligna, in which the sore throat has been exceedingly severe.

DR. FITZPATRICK believed that diphtheria very often followed scarlatina. He gave an instance of such a case in which a child died a most lamentable death.

DR. W. G. SMITH pointed out the necessity of very great caution in making diagnoses of cases of this character. Some time ago a school-teacher in Dublin came under his notice for what was represented as common sore throat. She had been in the habit of singing a good deal,

and latterly had found her voice becoming nasal, and fluids regurgitated through the nares. She recovered, however, under electrical treatment. A number of such cases are referred to in "Ziemssen's Cyclopædia," which go to show that the utmost possible caution should be exercised in cases of this kind.

DR. HENRY KENNEDY thought they should be very cautious in saying a case was not one of diphtheria, and instanced two cases in which a mistaken diagnosis would have resulted from any but the most searching care and acquaintance with all the surroundings. He did not agree in the identity of croup and diphtheria.

DR. CHARLES MOORE said that, as to the frequency of cases of diphtheria, he might mention that in three years in London he saw several cases of it, whereas in Dublin his experience was that it was very rare.

DR. CORLEY said the discussion had narrowed itself to two points—the efficacy of tracheotomy and the rarity or comparative frequency with which we see diphtheria. As to the question of the operation, Dr. Bernard, he thought, had put it in a nutshell. There was hardly any operation in surgery to which some objection could not be made. The surgeon is bound to try and prevent the child dying of stenosis of the larynx, although in all probability the child will die of the original disease that produced the stenosis.

DR. BENNETT.—The observations of Dr. Bernard touched upon some very important matters—one in particular being the question as to what we mean by diphtheria. As to the question of the operation, I hold with Dr. Little that diphtheria in Dublin is rare. I do not think I have seen a *bond fide* case of diphtheria—excluding membranous croup for the present. Now, as to whether the operation of tracheotomy is advisable or not I may mention a case that recently occurred. A mother of a child came to me the other day asking for medicine for a child with croup, and the ordinary mixture was given her, without seeing the child at all. On the following Monday it was brought to the hospital by the mother. There was an extreme degree of dyspnœa. The throat was coated in patches. The child was only four years old. Tracheotomy was at once performed, and we took the membrane from the incision. The temperature then was 103°, and the child breathing freely. Next morning the temperature was 98°; and the child is now well. The wound healed. If the operation had not been performed, no doubt the child would have died. In such cases interference is essential. You might as well refuse to operate in a case of strangulated hernia. Professor Spence lays down an opinion in favour of the low method of opening the trachea, if any. I never operated save by the high method.

DR. BERNARD, in reply to a question, said that in cases of epidemic diphtheria, he had, in a family of five members affected, seen the local symptoms different in each case.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

FORTY-SECOND ANNUAL SESSION.

EDWARD B. SINCLAIR, A.M., M.D., President.

WILLIAM ROE, M.D., Honorary Secretary.

Saturday, March 6, 1880.

E. B. SINCLAIR, A.M., M.D., President, in the Chair.

Craniotomy and its Alternatives—Cæsarean Section, Laparo-Elytrotomy, and Porro's Operation. By R. J. KINKEAD, A.B., M.D., Dubl.; Professor of Obstetrics, Queen's College, Galway; Examiner in Obstetrics, Q.U.I.; Surgeon to H. M. Prison, Galway, &c.

CRANIOTOMY.

"No surgical operation whatever is, abstractedly considered, more revolting to human nature than that of craniotomy, or embryulcia. It is, at best, a dreadful expedient; in too many instances it implies the direct and deliberate murder of a fellow-being by the hands of the accoucheur." ^a

"In the whole range of surgery, it is the only operation recognised and sanctioned by the British profession which is undertaken with the avowed intention of destroying life." ^b

That it should be necessary to recognise or sanction an operation so revolting, and having for its object the destruction of human life, although it be undertaken with a view of saving the life of another, is a reproach to surgery, and one which modern science ought strenuously strive to take away.

To see if this can be effected—if it is within the bounds not merely of probability, but also of possibility—it is necessary to investigate the grounds upon which craniotomy is justified, its statistical aspect, and its alternatives.

I do not at present propose to enter on the question of turning and the induction of premature labour. Both, in this country, are accepted as true conservative efforts. The former is limited in its utility by the shape and size of the pelvis; the latter reduces the prospect of the survival of the child, and we have seldom an opportunity of resorting to it in primiparæ.

The teaching of the British school has been most emphatic—that where a living child cannot be extracted entire *per vias naturales*, its

^a Sir J. T. Simpson's *Obstetric Work*. Priestly and Stever. Vol. I., p. 621.

^b Ramsbotham. *Obstetric Medicine*. 4th Edition, note, p. 303.

destruction and mutilation are justifiable, and that the safety of the mother is always to be preferred to that of the child.

This emphatic teaching—positive with regard to craniotomy, and, if anything, stronger in its negative side against Cæsarean section—has produced the only effect that could be expected from it. Thus nearly all the efforts of the profession have been expended in perfecting the details of the operation of embryulcia, and inventing instruments to so lessen the bulk of the child that its membra disjecta may be drawn through the smallest possible limits.

Most authorities, too, whilst justifying the operation, confess what is to be expected as the result of such decided teaching, that it is performed where there is no real necessity for it.

From this teaching a terrible result too often follows. Attempts to perforate and extract in extremely narrow pelves are made; extraction being found impossible, no option is left but either to operate on the mother, or let her die undelivered. Perhaps the latter course would then indeed be wisest, for her prospect of recovery after prolonged efforts to deliver by the crotchet or cephalotribe would be very slight indeed.

If the child's life was, in its essence, something different before birth from what it is after—if, whilst in its mother's womb, it had no separate existence—if it was merely a portion of its mother, and not a separate, distinct individual—if it was "a mere vegetative life"—then indeed the doctrine "that embryotomy stands first, and must be adopted in every case where it can be carried out without injury to the mother," or "with a reasonable prospect of safety to the mother,"^a would be established on a firm and unassailable basis, and we need have no more hesitation in removing the child, than we have in cutting off a leg or amputating a breast. But the case is widely different. Before birth the child is just as much a living, distinct individuality as it is after. It has as perfect a right to its life as its mother has to hers. We are equally bound to save its life if we can, and we ought not only to dare, but it is our bounden duty, to put its life—"that of an unborn child—into the scale against that of a being like ourselves, accountable to the Almighty."

"Assuredly no man would consider himself justified, on any plea whatever, in perforating and breaking down with a pointed iron instrument the skull of a living child an hour after birth, and subsequently scooping out its brain. But is the crime less when perpetrated an hour before birth? Modern physiology has fully shown that there is no such distinction between the mental and physiological life of an infant an hour before labour is terminated and an hour after it, as to make any adequate distinction between the enormity of the act as perpetrated at the one or at the other of these two periods."^b

^a Barnes' *Obstetric Operation*. 3rd Edition, p. 419.

^b Simpson. *Op. cit.*, pp. 606, 607.

“In fact, it ought to be deeply impressed upon every practitioner that he who destroys the child without due evidence that this is his only resource for saving the mother, is guilty of murder.”^a

I do not mean to argue that, with our present knowledge and experience, craniotomy is in every case unjustifiable.

I admit that there are cases in which it is justifiable to take away human life; but it appears to me that the question of the value of one life over that of another cannot be entertained. We are not the judges of which is the most valuable; if we entered on the course how wavering would be our decisions, how uncertain our actions, how many perplexing and disturbing circumstances would arise? We would be taking upon ourselves the arbitration of life, the functions of the supreme Judge.

In the case of a woman in labour, with pelvic obstruction, we have two human beings, innocent, yet as it were struggling with one another; unless aid is given, and that speedily, both will die; to all intents and purposes they will kill each other.

Our plain duty is to save one of the two so endangered, if we cannot rescue both. To carry this indication into effect, at the same time imbued with horror at the idea of gastro-hysterotomy, and shrinking from the awful idea of “plunging an iron instrument into the centre of the skull of a living human being,” it has been proposed and practised to wait for the death of the child before proceeding to lessen its bulk.

Is there much difference between waiting and watching—nay, for the mother’s sake, hoping—for the death of the child, and operating whilst it is still alive? “The destruction of the infant from procrastination differs very little from taking its life with the perforator.”

But granting, for the sake of argument, that there is a great difference in moral responsibility between craniotomy before, and waiting for, the death of the child, yet by so waiting we incur an equal responsibility with regard to the mother. Whilst we wait for the death of her offspring, her prospect of recovery is becoming less and less. “The chances of her death increase with the lapse of every hour,” until finally, when craniotomy is resorted to (the child being believed to be dead), the operation proves fatal in her exhausted condition. Thus this practice, instead of saving one life, too often occasions the loss of both.

The rule for our guidance being that, if we cannot save both, we are bound to save one, it follows that, craniotomy being necessarily fatal, should never be performed unless we are assured that with reasonable skill in its performance the mother’s life will be spared, that we do not expose her from the operation to equal peril with that resulting from gastro-hysterotomy; and, on the other hand, the Cæsarean section ought not to be undertaken unless we are assured that the child is alive, or, if dead, that it would be impossible to deliver it by any means *per vias*

^a Churchill. *Op. cit.*, p. 174.

naturales, or that the effort to do so would place the mother in greater danger.

The smallest diameters admitting of the extraction of a dismembered foetus are laid down by

	Inches		Inches
Campbell as	3×2	Churchill as	$3 \times 1\frac{1}{2}$
Dewees	$3\frac{1}{2} \times 2$	Ramsbotham	$3 \times 1\frac{1}{2}$
Bedford	$3\frac{1}{2} \times 2$	Playfair	$3 \times 1\frac{1}{2}$
Burns	$3 \times 1\frac{3}{4}$	Osborne	$3 \times 1\frac{1}{2}$
Barlow	$3 \times 1\frac{1}{2}$	Barnes from	$3 \times 1\frac{3}{4}$ to 1
Hamilton	$3 \times 1\frac{1}{2}$		

The limitation of capacity depends on the safety of the mother; not merely the probability of it, but the assurance, that by reason of the operation not only will her life not be lost, but, further, that it will not be placed in as dangerous a condition as if the Cæsarean section had been performed. That it can be accomplished with this assured safety in such low pelvic diameters some assert, others deny.

And, first, the objection that it is very difficult, if not "impossible, to ascertain with mathematical accuracy the precise measurement of an extremely contracted pelvic brim, in which a mistake of a very small fractional diminution would render the extraction of the base of a full-sized head quite impossible,"^a has real weight; for, although it has been argued that this tells as much against Cæsarean section as against craniotomy—"for, if we cannot determine in a given case that a pelvis is under two inches, how are we justified upon a mere conjecture in subjecting the woman to so terrible an operation, when probably she might be saved by craniotomy"^b—yet the answer is plain—How, under such circumstances, are we justified in taking the infant's life, when probably the woman cannot be saved by craniotomy?

Again, we have no means of judging before birth what is the sex and size of the infant; and whereas it might be possible to extract, with safety to the mother, a female or ordinary-sized child, it might be impossible to extract one at all if above the average, or only after such prolonged and violent efforts as would place the mother in imminent peril; are we justified in killing the child on the chance of its being small?

Another view must also be taken. Dr. Barnes says:—"Obviously we cannot recognise fatal cases of craniotomy in extreme deformity, say of conjugate diameter reduced to 2 in. or to 1.75 in., unless the operation was begun under selected circumstances—that is, before exhaustion had set in—and conducted with due skill and after the most improved methods. We are fairly called upon to reject all fatal cases in which craniotomy was performed with bad instruments, in which the skull was

^a Radford. *Medical Times and Gazette*, Jan. 16, 1869.

^b Barnes. *Ibid.*, Jan. 9, 1869.

either not crushed down by the cephalotribe or the calvarium not removed, so as to leave nothing but the base to bring through the brim, edge on, or the head and trunk not reduced by sections as by my method;"^a but this simply means that all fatal cases are to be rejected unless performed by experts. Before arriving at the conditions here specified, how many children are to be sacrificed, how many mothers lost? We want a rule; we require guidance, not for such a master of his art as Dr. Barnes, but for the general practitioner.

But even with the specialist to extract an infant through a low pelvic diameter is no easy task, and too often proves fatal to the mother. Dr. Meigs, in a case where the pelvis measured 2 inches in the conjugate, took several hours to break down the head, and afterwards three or four to extract the child. Murphy, where the pelvis measured $4\frac{1}{2} \times 1\frac{1}{2}$, could not complete the operation under seven hours; and one can only, on reading Osborne's account of the case of Elizabeth Sherwood, wonder at her recovery.

The very nature of the operation makes it most difficult and dangerous. "I question much," says Burns, "if extreme cases of embryulcia be not as dangerous as the Cæsarean section."^b

"I, without hesitation," observes Bedford, "would prefer the Cæsarean section if I had certain evidence that the child lived to any attempt to extract it *per vias naturales*, if the anterior posterior diameter measured less than 2 inches."

"If the circumstances of the case be such that the risk to the patient is increased much beyond ordinary perforation, I do not think we should venture upon that operation in preference to the Cæsarean section. In the former case the child must be sacrificed for a very doubtful advantage; in the latter there is every reasonable chance of preserving the child, while the mother has at least an equal chance that she will recover."^c

"Modern skill and ingenuity have devised means whereby the operation of craniotomy can be accomplished through a pelvis of much smaller dimensions than would have admitted of delivery in Smellie's day and with the resources at his command. But it remains to be proved whether in cases where the pelvis is so small that the conjugate diameter is only 2 inches or thereabouts the maternal mortality is less than in the cases of Cæsarean section operated on at an early stage of labour."^d

Whilst Playfair admits that "in such extreme deformities" ($1\frac{3}{4}$ in conjugate) "the difficulties of the operation are so great, and the bruising of the maternal structures so extensive, that it becomes an operation of

^a Barnes' *Obstetric Operations*. 3rd Edition, p. 418.

^b Burns' *Midwifery*, p. 501.

^c Murphy. *Op. cit.*, p. 24.

^d Smellie's *Midwifery*, edited by M'Clintock. New Syd. Soc. Note, p. 365.

the greatest possible severity, with results nearly as unfavourable to the mother as the Cæsarean section."^a

And Dr. Parry "is forced to conclude that perforation and breaking up of the foetus is not more successful than Cæsarean section in pelves with a conjugate $2\frac{1}{2}$ inches and less."^b

And Dr. Hodge, in his quarto work on Obstetrics, says:—"The bony strait is covered by delicate and important tissues, such as the edges of the uterus, the vagina, bladder, &c. Hence such tissues are powerfully compressed between the bones on the one side and the head on the other, greatly endangering their integrity and safety. The greater, therefore, the contraction the greater will be the risk to the tissue. No wonder, then, that there is danger of contusion, laceration, inflammation, ulceration, and mortification of these tissues in bad craniotomy cases. Hence accoucheurs have always dreaded craniotomy operations in confined pelves, as they have too often proved fatal not only to the integrity of the bladder and rectum and other tissues, but also to the life of the mother."

"I much doubt whether the more timely application of art combined with the utmost dexterity in the use of modern appliances will so materially lessen the mortality as to bring it up to the standard of favourable Cæsarean cases. The means which facilitate craniotomy by bringing the child within easier reach are the very means by which the greatest amount of evil is inflicted on the mother. After weighing these facts as far as they go, I feel confident that the most sceptical must admit that the mortality to the mother is as great, if not greater, from craniotomy and crotchet operations in extreme distortion of the pelvis as in the Cæsarean section; whereas by the latter, which is a far easier operation, and therefore requiring less dexterity, the child stands a chance of life, which by the former procedure is wholly precluded. Nothing would induce me again, even under the most favourable circumstances, to attempt delivery by the crotchet where the conjugate (true) diameter of the brim does not fully measure 2 inches, exclusive of the soft parts; and cases have arisen, and will again arise, where a larger space exists, but where either from a generally distorted or altered shape of the pelvis, or from great exhaustion, or from inflammation and swelling of the passages, or malposition of the child, and more especially where the child is alive, I should not hesitate to prefer the Cæsarean section to craniotomy."^c

"Both these cases prove the great danger of craniotomy when the disproportion is so great, and seem to justify the rule that when the conjugate axis of the pelvis is 2 inches or less, the Cæsarean section

^a Playfair. Op. cit., p. 199.

^b American Journal Obstet. Vol. V. 1872.

^c Cæsarean Operation and Craniotomy. Robert Greenhalgh, M.D. Obstet. Trans. Vol. VII., p. 285.

should be performed to preserve the child. The difference in the danger in such cases is, however, very slight, and when such is the case we are justified in the endeavour to save the child's life when that of the mother is in such hazard."^a

Unfortunately the question cannot be decided without statistics, which are sadly imperfect both in quantity and quality.

The average maternal mortality in Cæsarean cases is given as 1 in $2\frac{1}{2}$, in craniotomy as 1 in 5; but when we analyse these cases, and divide them into classes, according to time and cause, we obtain very different results. Thus, in Collins' cases the average of 1 in 5 obtained; but of these where labour had lasted more than forty-eight hours it rose to 1 in 3; and if his forceps cases be added, the maternal mortality, after a similar lapse of time, rose to 1 in $2\frac{1}{2}$; thus reaching the level of Cæsarean cases. Johnston and Sinclair publish the results of craniotomy in 130 cases; of these 26, or 1 in 5, died. It is curious that here the rule of the increase of mortality with the duration of labour does not hold good. There were 26 cases in which labour lasted forty-eight hours and more; of these 4 died, or 1 in $6\frac{1}{2}$.

But we have much later and more valuable statistics collected by the late Dr. Parry, of Philadelphia, who shows that in 70 cases where the conjugate was $2\frac{1}{2}$ inches, or less, the maternal deaths amounted to 26, or about 1 in $2\frac{1}{2}$, or 37.14 per cent., which is almost as great as that resulting from the Cæsarean section in America or on the continent of Europe. That this mortality was not due to unskilfulness is shown by the fact that nearly all of these cases were under the care of obstetricians of well-known reputation, amongst whom were Barnes, Dubois, Braxton Hicks, Greenhalgh, Radford, Meigs, Fordyce Baker, &c.

Hitherto I have only considered the mortality of craniotomy in contracted pelves. It has, however, to be resorted to in other cases.

In carcinoma of the cervix uteri or vagina the woman's days are numbered; she is suffering from a disease which in a short time must put an end to her existence, "whilst the child, if saved, and not sacrificed, may possibly" (nay, probably) "grow up and become a useful and important member of society. Under such circumstances we are assuredly justified in preserving the life of the child, even were it at the expense of some additional risk to the mother."^b On the other hand, it has been stated that "we have no right to lessen the woman's chance of life, because it is already small."^c This would be quite true if we had not to deal with the question of the child's right to live. Craniotomy in such cases places the woman's life in extreme peril. We are not, therefore, justified in sacrificing a healthy life on the chance of saving a failing one.

^a Murphy. Rankin's Half-yearly Abstract. Vol. XLI., p. 232.

^b Simpson. Op. cit., p. 649.

^c Barnes. Op. cit., p. 421.

From what we know as to the danger arising from pressure in labour complicated by pelvic, uterine, and ovarian tumours, it is evident, unless in the case of very small tumours, and those capable of being enucleated, or emptied of their contents, that, even after the reduction of the bulk of the head, they must be subjected to very dangerous pressure. "Unlike most cases of bony deformity the diminution of the pelvic canal is not limited to one diameter, but the tumour generally obstructs all the measurements of the pelvis, the lateral as well as the antero-posterior; hence there is usually very great difficulty in performing the operation, and in breaking down the head sufficiently to admit of its passage. This difficulty is alluded to by several authors."^a A most interesting case is recorded by Playfair, in a paper on the treatment of labour complicated by ovarian tumours, in the ninth volume of the "London Obstetrical Transactions." The patient, aged nineteen, had been in labour for more than twenty-four hours. The tumour left little more than "two inches clear space in the antero-posterior diameter;" it was tapped with a full-sized trocar without any favourable result. Efforts were in vain made to push it above the brim. "Under these circumstances it was evident that only one of two alternatives was left—either craniotomy or the Cæsarean section. *In accordance with the usual precepts taught in this country, the former was chosen*, and as further delay only seemed to make matters worse, and the pulse was beginning to rise, I proceeded at once to perforate. This was effected without much trouble, but the extraction of the head was attended with the greatest possible difficulty. Even after the whole of the brain substance had been removed, and as much of the vault of the cranium as possible, little or no progress was made. Two hours and a half had now passed, and little had been done, when I procured Dr. Simpson's cranioclast, and succeeded with it in effectually destroying the base of the cranium, and eventually, but not without much difficulty, in extracting the head. . . . Within twenty-four hours symptoms of diffuse peritonitis came on which resisted all treatment, and the patient sank on the third day."

Statistics of the results of labour, complicated with ovarian and other pelvic tumours, have been collected by Dr. Playfair and Professor A. Stadfeldt, and the study of them will give, not only the results to be expected, but an indication for treatment. Dr. Playfair has collected 57 cases of ovarian tumour obstructing labour. The following table, constructed from his, shows the maternal and foetal mortality:—

^a Playfair. *Obstet. Trans.* Vol. IX., p. 74.

Treatment	Total Cases	Children died	Mothers died	Per-centage of Maternal Deaths
Natural powers - - -	13	5	6	46·1
„ (Cyst ruptured) -	4	1	2	50·0
„ (lacerated Uterus)	2	2	2	100·0
Puncture - - - -	9	3	—	—
Tumour pushed above brim -	5	1	—	—
Premature labour - - -	1	—	—	—
Embryotomy - - - -	15	15	7	46·6
Turning - - - - -	5	4	4	80·0
Forceps - - - - -	2	1	1	50·0
Cæsarean section - - -	1	1	1	100·0
	57	33	23	—

These figures bring out very decidedly two facts :—1st. That in ovarian cases the procrastination practice is little less than criminal neglect, and that to wait for the death of the child before operating, or to postpone treatment hoping for the natural powers to expel the child, is to subject the mother to risks far greater than those attending gastrotomy; and 2nd. That the mortality attending craniotomy and turning is also appallingly high, and, when the necessary destruction of the child is taken into account, it is unjustifiable.

In some of these cases a double line of treatment was adopted, such as puncturing or pushing the tumour above the brim. Eliminating these, there were 10 cases of craniotomy, pure and simple, with a mortality of 60 per cent.

Table constructed from Professor A. Stadfeldt's.

Nature of Case	Per-centage	
	Maternal Mortality	Fœtal Mortality
Cases in which it was not stated that any operative measures had been adopted, but noted "died undelivered," or that they were cases of natural labour - - - - -	75·0	87·5
Premature labour induced - - - - -	25·0	100·0
Turning - - - - -	25·0	75·0
Forceps - - - - -	25·0	50·0
Tumour excised - - - - -	—	50·0
Craniotomy - - - - -	40·0	100·0
Cæsarean section - - - - -	61·9	33·3

From this it appears that the highest death-rate, as regards the mothers,

was when the cases were left to nature, next in the Cæsarean operation, and next in craniotomy; whilst the lowest foetal mortality was in the Cæsarean cases.

He remarks:—"Craniotomy is indeed well known to be an operation dangerous also for the mother—eight of twenty died—and there is no doubt that craniotomy, with subsequent extraction, in many of the cases here cited, has been performed under so perilous and difficult circumstances that sectio-Cæsarea would have been preferable, particularly if due regard had been had to the life of the child. It is the tenet that the life of the mother, in the case of mechanical disproportion during labour, demands the greater regard, which induces the accoucheur to prefer craniotomy to sectio-Cæsarea, when thereby a tolerably fair prospect is obtained for delivery *per vias naturales*. This view is also, according to my opinion, justifiable whenever there is the least reasonable doubt of the vital capacity of the child, and it can be excused when once in a way, in order to spare the mother if possible, a mistake is made. But I believe, on the contrary, that in all cases where an impediment to the labour exists on account of malignant and destructive pelvic tumours, which in a short time will cause the death of the woman, that mode of delivery should unconditionally be chosen which is the most merciful to the child, whenever a living foetus is concerned, even if the mother should incur greater danger. Consequently, sectio-Cæsarea or similar operations should be preferred to craniotomy. If we, under such circumstances, when expectation leads to no result, should perforate the foetus for the benefit of the weak vital frame of the mother, we should carry our respect for the life of the mother to an unwarrantable extreme."*

With regard to the maternal mortality in carcinoma of the uterus, a number of cases have been collected and analysed by Dr. G. Ernest Herman, which also prove the fatality of craniotomy in such cases. The results to the mothers of the various methods of treatment are shown in the following table:—

Number of Cases	Treatment	Mothers		Per-centage of Maternal Deaths
		Died	Recovered	
51	Natural powers - -	16	35	31·3
9	Forceps - - -	4	5	44·4
14	Turning - - -	8	6	57·1
14	Incision of tumour - -	3	11	21·4
12	Craniotomy - - -	9	3	75·0
12	Cæsarean operation - -	8	4	66·6
11	Rupture of uterus - -	11	—	100·0
13	Died undelivered - -	13	—	100·0
5	Part removed or expelled -	2	3	40·0
141		74	67	—

* Stadfeldt. *Obstet. Journal*, p. 357, Sept., 1879.

The high maternal mortality following craniotomy in extreme pelvic obstruction having been demonstrated, it remains for us to consider the substitutes for it, the mortality which has attended them, and whether that mortality is inherent in them, or due to other causes.

I believe that an examination of these operations will show that, if performed at an early period of labour, before exhaustion has set in and structural change taken place, with reasonable skill, with proper anti-septic precautions—in fact, with that care and foresight which modern abdominal surgery has taught us, the maternal mortality can be so lessened that it will sink below that following embryulcia, and experience produces evidence to corroborate this belief.

The alternatives which have been proposed are—symphysectomy, Cæsarean section, laparo-elytrotomy, and hystero-ectomy, or Porro's operation.

CÆSAREAN SECTION.

The first place must be given to the Cæsarean section, not merely from its antiquity, but because, no matter how valuable experience may prove laparo-elytrotomy and Porro's operation to be, their range is limited, and the Cæsarean operation must be performed where they are not available.

That the maternal mortality after Cæsarean section has been very great, especially in England, is an admitted fact, and the wonder is, not that so few have escaped, but that so many have survived.

For generation after generation it has been taught that it is an operation almost certainly fatal—consequently, it has seldom been performed until labour has lasted for many days; and when it was at length had recourse to, as was to be expected, the woman died. The experience so gained was taken as a proof of the truth of the denunciation of the operation, and thus, arguing in a vicious circle, the opinion became more and more firmly rooted that the mortality depended on the operation. Writer after writer repeated the condemnation uttered by their predecessors, until it became a maxim of the British school that the Cæsarean section should never be performed as an operation of election.

That the operation is dangerous, very dangerous, no one will venture to deny; but that "it is the most dangerous operation in surgery," that it is necessarily sacrificial, that it should be "resorted to with a feeling akin to despair for the fate of the mother, which is scarcely tempered by a hope of rescuing the child," I do deny; and I submit that, when we carefully study the evidence placed before us, and investigate the causes which produce danger in the operation itself, and those which have occasioned the excessive mortality hitherto recorded, we must admit that in the operation *per se* there is nothing to account for great fatality.

Owing to pregnancy a series of wonderful changes go on in the body; not only does the uterus grow and develop, but there is also general glandular growth and activity, altered condition and pressure of the

blood, and marked changes arise in the nervous system. In this condition any operation becomes more dangerous than in the unimpregnated; but that by care and strict antiseptic precautions they are not as dangerous as would have been *à priori* expected is proved by the results of ovariectomy during pregnancy. But after labour a condition of affairs obtains which is even more dangerous, for then we have the system loaded with *débris*; the enormously hypertrophied uterus has to be got rid of, and the secretion of milk, the starting the mammary glands into activity, has to be effected. We know how prone parturient women are to septic poisoning, and we often see disturbance of the system during the establishment of the mammary functions in the affection known as milk fever. Such a condition must make any operation then undertaken more dangerous than at any other period; but it is more than doubtful whether efforts at embryotomy are not more likely to result in septicæmia than the Cæsarean section.

The state of health of the patient—pelvic deformity being an evidence of disease past or present—has been put forward as a cause of the mortality; but the same argument would apply to all surgical operations, and would tell as strongly against craniotomy, for it could not be maintained that in the parturient or unhealthy condition the peritoneum was more tolerant of bruising or contusion than of a cut, or that septic infection was not as liable to result from bruised, semi-necrosed, or lacerated tissue as from an incised wound.

But experience proves that neither the constitutional condition nor the puerperal state are, in themselves, sufficient to cause the excessive mortality recorded. This is shown by the favourable results which follow gastrotomy after laceration of the uterus. Dr. Harris attributes this to the necessity of prompt interference being at once perceived, and asserts that it has “caused the rate of success to very nearly approach that claimed for ovariectomy.”

The sources of danger are—1. Peritonitis; 2. Hæmorrhage; 3. Shock; 4. Septicæmia; 5. Incarceration of intestines. There is no cause to which death is more frequently attributed than to peritonitis. Thus from it Harris records 16 deaths out of 37, and Keyser 77 out of 123. As its occurrence is much more frequent than after ovariectomy, where, when adhesions exist, much more injury is inflicted on the peritoneum, it must be occasioned by something more than the incision. The cause is found in the escape of blood, lochia, or other discharge, and, above all, in long-continued labour. Of course cases will be met with where the health of the patient is broken down, but similar cases turn out badly in all operations.

The incision in the uterus has been assumed to be a cause of peritonitis, and doubtless this is the case when the uterus has been bruised and injured by long-continued efforts to drive or drag the child through a

contracted pelvis. Injuries are occasioned by compression of the uterine tissue between the head and pelvic bones, and, when the liquor amnii has drained away, by pressure on the body of the infant. Furthermore, as a result of long-continued labour, the uterine tissue undergoes structural change; in some cases it is reported as being almost gangrenous. It is not to be wondered at, then, that the wound in it should not heal kindly, that it should become unhealthy, and that from it inflammation of a low type, probably septic, should be communicated to the peritoneum.

The danger from hæmorrhage was one of the principal reasons urged against the operation by older writers. Modern authorities are not at one on the subject. The weight of opinion seems to be that it has been overrated.

Hæmorrhage may occur from wounding a vessel in the abdominal incision, from opening a large sinus in the uterus, from cutting down over the placental site, or it may come from the internal surface of the uterus as it does in ordinary labour. The danger of bleeding from a wounded vessel in the abdominal wall does not deter the surgeon from an ovariectomy, or from an exploratory incision, or from operating for strangulated inguinal hernia. The danger of hæmorrhage from the uterus itself, either from the incised portion or placental site, is reduced to a minimum by adopting those expedients, by which we restrain or prevent hæmorrhage after labour. The great hæmostatic is the uterine contraction; and how this should be obtained we have a most valuable demonstration in Dr. Edmunds' cases.

If the uterus contracts well and tonically there will be no hæmorrhage, either at the time of or after the operation, and there will be no need of sutures. It takes place only in those cases where the uterus either does not contract, or having done so relaxes again.

The cause in most instances is not far to seek. Is it not what occurs in tedious labour?—the uterus worn out by prolonged and vain efforts, the nerve force expended, and the woman exhausted, there is little or no contractile force left; the uterine sinuses and arteries are not ligated by the interlacing muscular fibres, or, if contraction for a time takes place, relaxation shortly follows, either allowing an effusion of blood, or, if the prior contraction has been sufficiently long to allow of coagulation in the vessels taking place, or the relaxation is not so complete as to permit a decided hæmorrhage to occur, yet the next contraction expels coagula and fluid into the abdomen; and thus we have the explanation of cases in which the *post mortem* demonstrates blood in the peritoneal sac.

This danger can be combated by ergot, ice, perchloride of iron, and the other means we adopt to secure uterine contraction; but “to avoid uterine inertia or complete atony and an unfavourable closure of the

incision in the uterus, an early and, if possible, an elective operation should be performed.”*

Hæmorrhage from cutting down on the placental site can be avoided, or controlled by rapidly detaching the placenta and emptying the womb.

The great danger of septic infection has been fully recognised by authors. It is, however, extremely probable that many of the deaths attributed to shock, peritonitis, or even to secondary hæmorrhage are, in truth, due to blood-poisoning.

Whilst from the nature of the case the danger of septic poisoning after the Cæsarean section is clear, the prophylactic means to be adopted appear equally plain. The first place in this respect, as in everything connected with this operation, must be given to a timely operation.

The peritoneum being a great lymph sac, a continuous sheet, as it were, of the mouths of lymph ducts, although tolerant of rough handling and injury, is most intolerant of decomposing animal matter. If experience has taught any lesson more clearly than another it is this, that in operations engaging the peritoneum, all blood and discharge must be removed with the greatest care at the time of operating, and free exit must be given to any fluid which may collect afterwards.

The records of ovariectomy and laparotomy for extra-uterine foætation tell us over and over again the history of a rising temperature, hourly getting higher and higher, of the patient sinking, of unfavourable symptoms becoming more marked, when, on the abdominal wound either opening spontaneously or being deliberately opened, and exit afforded to pus, blood, or decomposing fluid, and the cavity washed with antiseptics, the temperature sinks, the pulse falls and becomes stronger, and the patient rallies.

The removal of blood and liquor amnii (if any has been allowed to enter the abdomen) at the time of operation is easily effected. To prevent its being poured out afterwards is a much more difficult matter. To secure this it is essential that the edges of the uterine wound should be brought into, and kept in, apposition, so that not only no fluid should escape through the wound into the peritoneal cavity, but also that septic infection may not take place through them, that they themselves remaining ununited may not become unhealthy or gangrenous, and so supply septic matter for absorption. This indication is met by timely operation.

Failing to secure permanent contraction, it is necessary to take other steps—1. The closure of the wound by sutures. 2. The removal of effused fluid as rapidly as it is poured out.

The question of sutures is a vexed one. It is held by some that if the uterus contracts well they are not required; if it does not they are useless; that it is dangerous to sew up an organ like the uterus, which expands and contracts, and is irritable under the presence of a foreign

* *Harris. Op. cit.* April, 1878. P. 320.

body; that the incision will gape between the stitches, and that if left in the abdominal cavity they are foci of irritation likely to culminate in inflammation.

If the uterus contracts tonically it is quite true that sutures are not needed. "In no timely operation," says Harris, "except in one instance, were sutures required, and in this one the knife cut through an intramural fibroid which caused the wound to gape,"^a but that if the uterus does not contract they are useless, is not borne out by experience.

In complete uterine inertia there is no other resource, not merely to guard against the effusion of fluid into the peritoneum, but to restrain bleeding from the incision. In such cases well-applied sutures have before now apparently saved life, as in a case recorded in the "Half-yearly Abstract of Medical Science," Vol. XLVIII., page 246.

In those cases where partial relaxation and contraction occur, and in which sutures are said to be dangerous or useless, because they will either be torn out or the wound will gape between them, careful attention to two points will remove the objection.

After normal labour tonic contraction does not immediately set in; the womb contracts and relaxes rhythmically, as it did during pregnancy and labour; but when it relaxes it does not get larger—it goes through a sort of squeezing process, expelling the fluid portions of the coagula. After a time it becomes quiescent, and the mistake generally made is closing the abdominal wound too soon. This ought not to be done, nor ought sutures, save in cases of bleeding from the incision, be introduced until this process has ceased.

The introduction of the ordinary interrupted suture has two great objections; they must be left in permanently, and the wound is likely, unless a large number are introduced, to gape between them. To obviate the former difficulty carbolised gut has been used, but it is now universally condemned, as bathed in moisture the knots untie and permit the wound to reopen.

Ovariectomy has shown that sutures may be left in the abdominal cavity without doing any harm. With the object of removing them Dr. Barnes has proposed an ingenious method by which the uterine wound is closed and brought into apposition with the abdominal wall, and by which the sutures may be withdrawn. A somewhat similar plan was adopted by Martin; but it is open, in addition to the objection that he himself admits arises from the sinking of the uterus in the pelvis, to others resulting from interference with the functions of the bladder, due to the fixation of the uterus, and that as pregnancy may again occur, trouble would then be likely to result from the adhesions.

In the ordinary interrupted suture the binding force is at right angles to the line of the incision; there is nothing to prevent the wound

^a Harris. *Op. cit.* January, 1879. P. 55.

elongating, and they only keep it in apposition at the points where they are inserted; they cannot prevent it gaping above, below, or between them.

In 1865 and 1875 Mr. Spencer Wells adopted a better plan; he made use of a long uninterrupted suture, leaving one end hanging out of the vagina, by pulling on which it was removed. His first case recovered, the second died, and at the *post mortem* it was discovered that it had worked its way out of the upper half of the wound.

The wound can be perfectly closed, so that it cannot open, the suture removed when its work was done, and a certain amount of drainage provided for by the following method:—A long suture is armed with a needle at each end. Commencing at the upper angle of the wound a needle should be passed from within outwards on each side of the incision at the level, or a little above it, of the termination of the incision. The suture is now drawn until its centre is in the middle line. The right hand needle is then passed through the left, and the left hand needle through the right, side of the uterus about $\frac{1}{2}$ inch from the edge of the wound from without inwards, and so on from within outwards and without inwards until the entire wound is closed, taking care that the needles pierce the uterine tissue exactly opposite each other, and that the distance between the points inside the uterus should be less than that on the exterior. When the lower angle is reached one end should be drawn through the os uteri and vagina, which can easily be done by a loop of silver wire, tubular needle, or catheter, and the other through the lower angle of the abdominal wound.

There being no knots, carbolised gut can be used and allowed to remain until the internal portion is absorbed and the ends drop off.

The second indication of providing a free exit for discharges should not be overlooked. Drainage and antiseptic irrigation have proved of signal service in abdominal operations. The natural channel for escape of lochia is through the os uteri. If this is kept open, and firm contraction has been established, and the lips of the wound retained in apposition, there will be no escape of discharge into the abdomen, as the contents of the uterus will find their way through the opening which offers least resistance; clots not being formed, there will be no uterine effort to force out its contents. But as it will not always be possible to secure this favourable condition, drainage by artificial means becomes advisable. Dr. T. Mayer, in a case operated on by him, passed a drainage tube through the lower angle of the uterine and abdominal wound, and the other through the os and vagina. Tying both together over the pubes, it was left in until the sixteenth day. There was no metritis, metro-peritonitis, or hæmorrhage.

“The plan has been tried with success by several operators on the Continent, and without uterine suture.” “As the contracted state of the

os uteri and vagina are frequently obstacles to the discharge of the lochia, the use of the drainage tube would seem to be a valuable improvement, particularly as caoutchouc appears to possess but little irritable properties."^a

In ovariectomy, if symptoms of septic poisoning show themselves, there is no hesitation in opening the lower portion of the wound and giving exit to decomposing fluid. Glass drainage tubes have been inserted, and the cavity washed out with antiseptics. There is no reason why this should not be done with equal success after the Cæsarean section, and there is more need for it, for in it there is a source of continuous infection.

That after such an operation shock should be a source of danger appears self-evident. Yet experience does not prove this to be as great as would *à priori* have been imagined.

The general health of most of the patients is, and the power of rallying after the shock of the operation ought to be, superior to that of ovariectomy cases. It is in cases exhausted by tedious labour, and perhaps fruitless efforts to extract the child, that shock might be expected to act most fatally; yet, comparatively speaking, how few are the cases where death actually results from this cause. Thus, out of Harris's cases there are only 15 attributed to shock or exhaustion.

In many cases it is recorded that the patient, even when worn out by a tedious labour and long suffering, rallies very shortly after the operation, expresses herself as feeling comfortable—the operation being so much less painful than labour, the relief from pain and unavailing efforts so great, that the condition of the patient improves; but assistance has come so late, such irretrievable mischief has been done, that recovery is hopeless. "Moreover," writes Dr. Greenhalgh, "this case proves to demonstration how trifling was the shock of a grave operation, even when performed upon a woman greatly reduced in general health by a mortal disease and while in a state of alarming prostration."^b

In one of Professor Mayer's cases "the patient stated after her recovery, that the ventral incision felt like drawing a red-hot needle over the skin; that cutting the uterus was not at all painful; but that stitching the abdominal wound was the most severe stage in the operation. It has been repeatedly stated that the operation was not any more severe than a violent natural labour, and this complaint of the sutures is a general one. The whole process is much less severe than the suffering during a protracted delivery by craniotomy and evisceration."^c

If a further analysis of recorded cases is made, it will be seen that exhaustion prior to operation has obtained in most of the cases where

^a Harris. Op. cit. April, 1878. P. 331.

^b Obstetrical Transactions. Vol. VII., p. 279.

^c Harris. Op. cit. April, 1878. P. 332.

death was attributed to shock. It is, therefore, unfair and misleading to attribute to the operation an effect which does not properly result from it. Shock follows every injury to the body—surgical or otherwise—usually in proportion to the magnitude of the operation and the pain inflicted; and if that injury happens to persons who have undergone hard and painful work, who are greatly exhausted, who have been for hours or days insufficiently nourished, and who, owing to suffering and work, have been unable to digest and assimilate a sufficient quantity of food, the prospect of recovery from the shock of the injury is not good; but we do not attribute the fatal result to the shock so much as to the condition of the person. Why, then, should we reason differently in Cæsarean cases? Operation is deferred until hours, in some cases days, of labour—which is very hard work, attended with acute suffering—have been gone through; and if the patient then succumbs to the shock of the operation, it is the fault of the delay—of the exhaustion of all the vital powers; it is our own procrastination that is to blame.

Thus it appears that there is nothing in the operation itself which care, antiseptic precautions, and the knowledge which modern abdominal surgery has taught us, should not enable us successfully to grapple with. We have in a great measure, in ovariectomy, conquered peritonitis, septicæmia, hæmorrhage, and shock; is there any reason why we should not be as successful in Cæsarean section?

The causes, then, of the enormous mortality hitherto recorded must be sought for outside the operation. It may be due to circumstances antecedent to, or independent of, labour—such as malnutrition, grave organic disease, or bad habits of life. Dr. Harris attributes the bad results of English cases to the beer-drinking habits of the peasantry. But, however these may influence the results in some cases, there can be little doubt but that delay in operating is the prime factor of the mortality.

This is generally acknowledged, but strange to say its significance as a means of producing more favourable results—as placing the Cæsarean section amongst elective operations—has been ignored or overlooked.

Testimony to the fatal effects of procrastination is borne by Playfair, Barnes, Harris, Stadfeldt, and others. The enormous importance of early operation will be more clearly seen from an examination of the recorded cases, and will show—so far from being “necessarily almost a forlorn hope,” almost certainly fatal—that the Cæsarean section, when properly performed, before symptoms of exhaustion have set in, has a comparatively low mortality, and is absolutely more favourable to the mother than craniotomy.

In the cases which I have collected and tabulated, there were 9 operated on within 24 hours of labour coming on. Of these, 3 died and 6 recovered; but out of the 3 deaths we find 1 was a case in which labour was induced a fortnight before term, and another was a subject

of a cancerous tumour of the recto-vaginal septum. Although it is stated that she was about eight hours in labour, her condition at the time of operation is thus recorded:—Temperature, 102° ; pulse, 130; tongue brown; general condition prostrate. Here we have either exhaustion from a very short labour, or an almost moribund condition prior to the operation, and the fatal issue from peritonitis and exhaustion is not fairly attributable to the operation. Eliminating these two cases, in the former of which an operation prior to the Cæsarean section was undergone, we have 7 cases, with 6 recoveries, or 85 per cent.

In the cases recorded by Dr. Harris in the *American Journal of Medical Science* for April and July, 1878, and January, 1879, we find that there were 24 cases in which the operation was performed early, before the lapse of 24 hours. Of these, 6 died and 18 were saved, or 75 per cent.

M. Pehan-Dufeillay has also shown that of cases operated on early, and before the strength was exhausted, 81 per cent. recovered.

The most remarkable feature in all English and American records is the few cases in which an early operation has been resorted to. Thus, out of 103 recorded by Harris we find only 24, in those by Radford 20, and in the 32 which I have collected only 9.

The time when to operate cannot be decided by hours, for although for statistical work a limit of hours which have passed since labour set in must be taken, yet the rule ought to be, not that the operation should be performed before so many hours have elapsed, but before symptoms of exhaustion have set in. One woman is more exhausted after a few hours' suffering than another would be in many. The rallying power, too, is greater after a short than after a protracted labour. In this point of view, the case which I have taken from the *American Journal of Obstetrics* for April, 1879, is most instructive.

It has been recommended to induce labour, and operate before term, in order to avoid the degeneration of uterine tissue that follows delivery. But I believe nothing is gained by this course. Involution will occur, no matter at what period of pregnancy the foetus is removed. The shock of inducing labour being added to that of the Cæsarean section, increases the danger, and if operation before term is considered advisable, the cases in which it was combined with ovariectomy prove that the induction of labour is needless.

I have tabulated 32 cases which I have collected from various journals; these are all the cases, both favourable and unfavourable, which I could find. I may have overlooked one or two cases, as the series of journals accessible to me had a volume or two missing, and I have omitted two or three in which only the fact of the operation having been performed was stated, in which the time that had elapsed after the operation was too short to enable the result to be recorded, and in which the details were so defective as to render them worthless; and I have

purposely, with one exception, tabulated only cases recorded in British journals, and performed by British surgeons.

The cases I have thus collected date from 1865, when Dr. Radford's series ended, one case (No. 1) excepted, which seems to have escaped his notice.

On analysing them it appears that out of 32 cases 12 mothers recovered, and 20 died, or 37·8 and 62·5 respectively; 18 children were born alive, or 56·2 per cent.; 12 children were dead before operation, or 37·8 per cent.; and of 2 there is no report.

From this it appears that Radford's opinion is correct—that the prospect of saving the infant is as good after Cæsarean section as after natural labour. It is obvious that the operation cannot be blamed for not saving 12 dead children.

Table showing percentage of Maternal and Fetal Recoveries with regard to time of operation.

Time after Commencement of Labour when Operation was performed					Percentage of Mothers Saved	Percentage of Children
24 hours,	8 Cases, ^a	-	-	-	75	62·5
48 „	6 „	-	-	-	33·16	50
72 „	7 „	-	-	-	42·8	86·7
Over 72 „	5 „	-	-	-	-	-
Time not stated,	5 „	-	-	-	20	60

This marked difference between the results of early operation and late confirms remarkably the conclusions drawn by Dr. Harris from the cases which he has collected; and the favourable results to be expected from early operation is still more clearly shown by looking at them from another point of view. Out of the 32 cases collected 12 mothers were saved; of these 6 were from those operated on in the first twenty-four hours of labour.

Dr. Harris, from an analysis of Dr. Radford's tables,^b points out that in British cases the mortality is much higher than in American. Thus, he says, in 20 operations where labour had lasted from five to eighteen hours, but 4 women were saved. In the United States they would expect to save 60 to 70 per cent.

By extending the time to twenty-four hours he finds in same tables 25 operations with 6 women saved, or 24 per cent. In the States, under

^a One case moribund at time of operation from carcinoma omitted.

^b *American Journal of Medical Science*, Jan., 1879, p. 68.

same limit of time, they would expect to save 50 to 60 per cent. ; and he endeavours to account for this excessive mortality by attributing it to dampness of climate, extreme poverty, and beer-drinking. In the cases I have collected the mortality after early operation is not more than in America, with same limit of time.

He also remarks that within the last decade the results *quâ* the mother have been more unfavourable, and attributes this to the teaching that this operation is to be regarded as a last resort, and never as an operation of election if there is a possibility of delivery by cephalotripsy, even although it may rightly be considered equally dangerous to the mother.*

Although the cases tabulated show in many instances an unaccountable delay that can only be attributed to similar influence, yet the results of British operations since 1870 show that at least we have not retrograded ; out of 8 timely cases 5 were operated on in the last decade. But, on the other hand, it cannot be shown that we have progressed, that early operation is the rule, or that the weight of the teaching of the fatality of the operation is lessened.

With regard to the use of uterine sutures I find that in 14 cases where they were used 4 recovered and 10 died. The number used varied from 16 in one case to one in another. The materials used were silver wire, fishing gut, carbolised gut, silk, and iron wire. In some cases the patient was obviously moribund, and in one she died on the table. It is impossible, therefore, to draw from the records any conclusion as to the advisability of suturing the uterus or not, though in some cases they seem to have been decidedly beneficial ; and it would appear that, if sutures are used at all, a sufficient number to secure closure of the uterine wound ought to be inserted.

There were 10 cases of dwarfs—the tallest measuring 4 ft. 9 in., the smallest 3 ft. 6 in., whilst one is stated not to be larger than a girl of ten years old. Only 2 recovered, or 20 per cent. This was also the number in which a timely operation was resorted to ; but the early date of operation was not the reason of recovery, as both died ; in one premature labour was induced, in the other the uterus was sutured by carbolised gut. This patient died of septicæmia and embolism ; and at the *post mortem* the sutures were found untied and fluid effused into the peritoneal cavity. Of the two cases which recovered one had been thirty-five hours in labour ; but, save being small, there does not appear to have been any constitutional defect ; the other was a Hindoo woman.

Adding the 32 cases which I have collected to the 100 recorded by Dr. Harris, we find that out of 132 operations 56 mothers were saved, or 42·4 per cent.

There were 32 timely operations ; of these 24 mothers, or 75 per cent., were saved.

* Harris. Op. cit., p. 56.

In 100 cases the operation was delayed from periods varying from over twenty-four hours to seven days, and only 32 per cent. recovered. No stronger argument in favour of early operation, or against the folly of deferring interference, could be produced than placing these figures indicating the different results side by side.

In most of the cases chloroform was used; in some ether; in one, at least, ether spray; and in a very few no anæsthetic. It appears, however, to me that it is a very doubtful question if anæsthetics ought to be used. Vomiting, always distressing, sometimes uncontrollable, frequently occurs after operations on the abdominal cavity; and the use of chloroform or ether is generally followed by this distressing affection. In these cases it is sure to aggravate the tendency, and so cause serious injury. On the other hand, the pain of the operation without an anæsthetic does not seem much. It has been described as not as severe as the pangs of labour itself—the most painful portion being the incising the skin and the introducing of the abdominal sutures, whilst the uterine incision seems to be accompanied with little, if any, suffering. Ether spray, if merely applied during the cutaneous incision, has not the disadvantage of inhaled anæsthetics; but it is doubtful if the pain of the freezing is not as acute as that which results from the knife; and at night ether would be very dangerous, owing to its highly inflammable nature.

Although the treatment which is best for the child ought to have weight in deciding what ought to be done, yet the merits of the Cæsarean section as an alternative of craniotomy will be generally judged with regard to its results in saving the mothers.

The mortality in craniotomy cases where the conjugate is $2\frac{1}{2}$ in. or less has been shown by Parry to be $37\frac{1}{2}$ per cent.; Dr. Harris states that he has verified this by his own researches. In the whole Cæsarean cases which I have referred to it was 57.6 per cent.

But these cases include patients exhausted after long labour, some in *articulo mortis*, others suffering from grave and mortal disease, and in nearly all it was decided that craniotomy could not be performed, whilst in some it had been tried and failed—in a word, they were, with few exceptions, operations of necessity, death resulting not so much as a consequence of the operation as of other causes. But when we come to the few cases in which timely operations were performed, we find the maternal mortality only 25 per cent., or $12\frac{1}{2}$ per cent. less than the craniotomy cases. Dr. Barnes remarks, as I have quoted before, that fatal craniotomy cases cannot be recognised unless the operation was performed before exhaustion had set in—conducted with due skill, and after the most improved methods; and it may be argued that, judged by this standard, the mortality would be less than $37\frac{1}{2}$ per cent.

If this method of exclusion be applied to craniotomy, does it not apply with equal force to the Cæsarean section? and if applied and practised,

I doubt not that the mortality would be reduced below 25 per cent., and more than hold its own against embryulcia.

Although timely operation is the great prophylactic, yet if we take Dr. Edmunds' case as a standard of the precaution and care which ought to be taken, and considering that it is the second successful case similarly operated on by him, it is reasonable to suppose that the general mortality, even with prolonged labour, would be greatly reduced; and yet we find that even in early cases, where the mortality was only 25 per cent., no such precautions were taken, and that none of the cases have been treated in an antiseptic manner which would satisfy ovariologists.

The relative maternal mortality after craniotomy and Cæsarean section, will be more easily perceived from the following table:—

Cause of Operation	Percentage of Maternal Mortality
CRANIOTOMY.	
Contracted pelvis, 2½ and less (Parry) - - -	37·5
Pelvic tumours (Stadfeldt) - - - - -	40·0
Ovarian tumours (Playfair) - - - - -	46·6
In cases where no other treatment adopted (Playfair)	60·0
Carcinoma of uterus (Herman) - - - - -	75·0
CÆSAREAN SECTION.	
130 cases, all causes (Harris) - - - - -	56·0
32 „ „ (Kinkead) - - - - -	62·5
TIMELY CÆSAREAN OPERATION.	
32 cases (Harris and Kinkead) - - - - -	25·0

LAPARO-ELYTROTOMY.

To escape from the dilemma, of embryotomy on the one hand, with its necessary destruction of the child and great risk to the mother, and on the other of Cæsarean section, with its high rate of maternal mortality—to devise some method of procedure that would save the child and lessen the risk to the mother—is a problem to solve which efforts have been made before our day.

With this object in view, Segault, in 1768, proposed, and in 1777 carried into effect, section of the symphysis pubis, saving both mother and child, but further experience proved it to be worse than useless, and

it remains recorded in text-books only to be condemned, and as evidence of dissatisfaction with, and a desire for something better than, craniotomy and Cæsarean section.

Symphysiotomy having failed, and obstetricians feeling, in the eloquent words of Dr. Thomas, "that clear as the light of day should be the indication, valid beyond all question the conclusion, that no safer course is known to science before one human being should take upon himself the terrible responsibility of destroying the life of another,"^a other ways out of the difficulty were sought. In 1806 Jörg proposed opening the abdomen and vagina, and delivering through the os uteri. His proposal differs from laparo-elytrotomy, as advocated by Thomas, in this—that it necessitated opening the peritoneum. Fourteen years later Ritgen endeavoured to operate without wounding the peritoneum; profuse hæmorrhage occurred, and, to save the child, he turned the operation into the Cæsarean. The woman died. It was next attempted by L. A. Baudelocque; in his first case there was profuse hæmorrhage, and, like Ritgen, he abandoned the attempt at laparo-elytrotomy, and removed the child by the Cæsarean section. The woman died of hæmorrhage. In his second case, whilst trying to tie the internal iliac artery, he wounded the external, and was obliged to ligature the common iliac artery; he, however, completed the operation. Somewhat similar methods of procedure were recommended by Sir Charles Bell and Dr. Physick, of Philadelphia.

The credit of reviving—in fact, of reinventing, the operation is due to Dr. Thomas, as he remarks:—"The complete oblivion into which it fell will be appreciated when I assert that, until some time after I had essayed it on the cadaver" (1870), "I was fully under the impression that the idea originated with myself."^b

The operation consists of an abdominal incision parallel to Poupart's ligament, from $1\frac{3}{4}$ inches above and outside spine of pubis to anterior-superior spine of ilium. The muscles are then cut through layer by layer. The peritoneum lifted up (not cut), a staff, or the finger if possible, is passed into the vagina, and it is pushed up into the wound. The vagina is incised on the point of the sound or finger, at a distance of $1\frac{1}{4}$ to $1\frac{1}{2}$ inches from the uterine insertion. The incision is only to be large enough to admit one or two fingers, and is then to be enlarged by tearing. The os uteri is to be lifted by blunt hooks, and at same time an assistant depresses the fundus towards the opposite groin. [Professor Stadfeldt says—"An assistant draws the fundus uteri well upward and towards the left side,"^c whereas Dr. Thomas, in reports of Cases I. and II., says distinctly that it was depressed.^d] The child is then

^a Thomas. *American Journal of Obstetrics*, p. 227. 1878.

^b Thomas. *Op. cit.*, p. 230.

^c *Obstet. Journal*, p. 415. 1879.

^d *Op. cit.*, pp. 231, 232.

delivered by version, or by the forceps. Hæmorrhage having ceased, the abdominal wound is closed by sutures. "The vagina should be syringed out every five hours with warm carbolised water, the nozzle of the syringe being carried through the vaginal opening, and the fluid forced out through that in the abdomen."^a

Prior to operation, the os uteri ought to be dilated either by the natural progress of labour, or, if delay be inadmissible, by artificial means. Independent of its results to the mother and child, its adoption will depend on the answer to the question—Is it a difficult operation? "According to the unanimous statement of all who have tried it, it is not even a difficult operation."^b

In the only cases operated on in this country, no difficulty was experienced.

From the consideration of the steps of the operation, there seems to be no reason why it should not be performed by any surgeon endowed with ordinary operative skill. The only difficult step in it is to divide the transversalis fascia without wounding the peritoneum, but this is not greater, if indeed it be so great as is daily met with in hernia.

In only two cases was there any difficulty in extracting the child, and that was caused by the ankylosis of the hip-joints at right angles to the pelvis, which was readily overcome in one, and by tonic contraction of the uterus in the other.

The dangers to the mother likely to result are:—1. Hæmorrhage; 2. Shock; 3. Septicæmia; 4. Cellulitis; and 5. Vesico-vaginal Fistula.

The three first are common to it and the Cæsarean section, but in the latter there are peritonitis, metritis, and incarceration of the intestine, which are almost, if not altogether, excluded in laparo-elytrotomy. Cellulitis may occur after Cæsarean section, and peritonitis after laparo-elytrotomy, but they are rare complications, and peritonitis is a more dangerous disease. Shock is more severe when the peritoneum is opened. The dangers, then, to be compared are hæmorrhage and septicæmia.

In laparo-elytrotomy it is evident that the danger from the latter source is less. The wound is, as it were, superficial; it is easily reached, it is readily drained, and can be kept flooded with disinfectants.

The risk from hæmorrhage is more serious. The vagina is surrounded by a vascular network of vessels freely anastomosing with those of the uterus, rectum, and vulva, and likely to bleed profusely on being cut. Ritgen's and Baudelocque's cases show how serious this may be. Serious bleeding may occur after Cæsarean section, but I have already pointed out how it may be controlled. This danger, then, appears to be less in Cæsarean section. Vesico-vaginal fistula is a complication peculiar to

^a *Obstet. Journal*, p. 247. 1879.

^b *Garrigues. Gynæcological Transactions*, p. 220. 1878.

laparo-elytrotomy. Out of the eight later cases the bladder was injured in four.

In favour, then, of laparo-elytrotomy, as contrasted with the Cæsarean section, we find metritis and incarceration of intestine excluded, peritonitis reduced to a minimum, and shock and septicæmia lessened—on the other hand, increased risk of hæmorrhage and vesico-vaginal fistula. The advocates of the operation assert, with regard to hæmorrhage, that it can, in a great measure, be prevented, and, if it does occur, controlled. “That hæmorrhage may be one of its results I freely admit, as everyone must do who examines the vascular supply to the walls of the vagina. . . . But, even admitting that it may occur, unless it be so violent and uncontrollable as to prove fatal, it may become a question whether the risks of it should not be taken, when, in compensation for them, we obtain immunity from the dangers of peritonitis and shock, and the diminution of the danger of septicæmia, or at least the acquirement of greater facility for its treatment.”^a

“The third step—the incision of the vagina—may be made almost safe by using the cautery, and by tearing instead of cutting.”^b The cause of the bleeding in Ritgen’s and Baudelocque’s cases seems to have been cutting the vagina. Dr. Thomas, after a small incision, tears enough to admit “the tips of his fingers put together as for dilating the os; whilst the hand passes the fissure tears more; and, finally, during the passage of the child’s head it tears still more.”^c

This plan has, up to the present, proved satisfactory, as in the eight reported cases there was no hæmorrhage. The upper and lower portion of the vagina being more vascular than the middle, and the ureter lying in the upper portion, the opening should not be made too near the uterus.

The direction of the wound is also important. Dr. Thomas endeavoured to tear longitudinally, Dr. Skene transversely. Dr. Garrigues, who made experiments on the cadaver, found that when he made a transverse incision the tear followed that direction, and when he cut in the axis of vagina it tore longitudinally, but with more difficulty. As the tear will most readily follow the direction of the strongest fibres of the vagina, which run in an oblique direction downwards and inwards, it should be made obliquely parallel to the brim.

Vesico-vaginal fistula may be avoided by prolonging the rent backwards, and by extracting slowly, so that the parts may have time to expand, and thus limit the extension of the vaginal wound. If the bladder is injured the fistula may heal spontaneously, as happened in two cases.

With regard to the range of the operation two important points remain

^a Thomas. *Op. cit.*, p. 245.

^b Garrigues. *Gynæcol. Jour.*, p. 223. 1878.

^c Garrigues. *Op. cit.*, p. 218. 1878.

for experience to decide:—1. Can it be performed on the left side? 2. Can it be performed more than once on the same side?

In all the recorded cases, save in Baudelocque's, it has been done on the right side, and in his there does not appear to have been any difficulty experienced in extracting the child; but peritonitis was discovered at the autopsy. This may have been due to ligation of the vessels.

The healing process and cellulitis, if present, would seem likely to so mat the parts together, and to so alter their relations, as to render a second operation, if not impossible, exceedingly difficult and dangerous. These points time will alone solve. Yet a case recorded by Dr. Skene [in which he says, "But on reaching the region of the peritoneum, I encountered the products of a previous inflammation, which obscured all the normal anatomy. I have always believed that previous pelvic peritonitis would greatly complicate the operation, and have dreaded that such a case would fall to my lot, and in this case I fully realised my expectations. The peritoneum, iliac fascia, bladder, and vagina were all glued together by plastic material, which rendered the normal tissues unrecognisable"] shows that, although the operation is rendered more difficult, and requires greater care and more time, it is not impossible or necessarily fatal. In his case both mother and child were saved, although the former was a bad subject for operation.

The table I have annexed divides itself into two parts—3 early cases and 8 modern. The total mortality was 7, or 63·3 per cent. But the 3 early cases must be excluded, for in 2 laparo-elytrotomy was abandoned and the Cæsarean section substituted, and in the third the operator needlessly complicated it by ligaturing the internal and common iliac arteries—in itself a serious operation. Of the 8 cases since 1870, 4 proved fatal, or 50 per cent. This would, at first sight, indicate that, however less severe theoretically, practically it was as fatal as the Cæsarean section. But an examination of the cases shows that the entire mortality cannot be attributed to the operation.

In Dr. Thomas's first case the woman was moribund, and the operation was undertaken solely in the interests of the child, with no hope or expectation that the mother's condition would be benefited. In Dr. Skene's first case the woman had been in labour for forty-eight hours. She is described as being in a condition of exhaustion; attempts at version and extraction after perforation had failed; her condition was so bad that "it was felt that if she died—which, in all probability, she would do—she would be relieved during her last hours from the severe labour pains."^a

In Dr. Hime's case the patient was in a hopeless, debilitated condition from cancer of the recto-vaginal septum, and had been confined to bed for eleven weeks prior to the operation.

^a *Amer. Jour. Med. Science*, p. 233. 1878.

In comparing the comparative mortality of two operations the condition of the patient must be taken into account, for in a healthy patient, unexhausted by long labour, both may give good results. Yet, when symptoms of exhaustion have set in, one may afford better results than the other.

In Cæsarean section the rate of mortality increases enormously with the duration of labour, and after four days the dangers from septicæmia, peritonitis, and shock, would render the prospect well nigh hopeless.

Although the cases of laparo-elytrotomy are too few to enable us to form a decided opinion, yet it is worthy of note that in one case the patient had been four days in labour, and her condition is described as very bad. It seems that it is probable that in such cases its mortality will be less than that of the Cæsarean operation.

If we exclude the cases moribund at the period of operation—viz., 1 from pneumonia and 1 from cancer—we find 6 cases and 2 deaths, or 33·16 per cent.

Of so new an operation it is impossible to speak decidedly. In its youth ovariectomy did not yield very favourable results. Its position is very fairly described by Dr. Thomas:—"It may be well for me to meet the question whether I regard it as proved that laparo-elytrotomy is superior, in all cases, as a resource practised in the interests of mother and child, to the Cæsarean section, and, in many cases, even for the mother to embryulcia. . . . In reply to the question I have now proposed, I would say that I do not regard the claim of laparo-elytrotomy to being established as a standard operation as yet proved, but that I do regard it as now sufficiently tested by experiment as to deserve careful consideration at the hands of the medical profession."^a

Even if experience proves that its results are commensurate with the favourable hopes held out by theory, its field is limited. It is doubtful if it can be repeated on the same side; it cannot be performed if the head is wedged in the pelvis; if the os is occluded; if there exist occlusion or narrowing of the vagina, or its obliteration by cicatricial tissue; when the pelvis is blocked by tumours, or the os uteri is the seat of considerable disease.

It is worthy of note that in none of the recorded cases did the patient suffer from the distressing vomiting so common after the Cæsarean section.

PORRO'S OPERATION.

This, the latest operation proposed as an alternative for embryotomy, has had a wonderfully rapid development. First successfully performed by Professor Porro, of the University of Pavia, on the 21st May, 1876, it has already been performed thirty times; the second time by Professor

^a Thomas. Op. cit., p. 244.

Späth, of Vienna, twelve days after Porro's case. But, truly, there is nothing new under the sun! In 1581, François Rousset (as shown by Professor Stadfeldt^a) foreshadowed it, and Dr. Blundell,^b as a result of experiments on animals, proposed its adoption. It was first performed on the human being by Dr. Horatio Storer, of Boston, in 1869. In a Cæsarean case in which there was a fibroid in the uterus, and in which the bleeding could not be stopped, he removed the uterus. The woman, however, died. He did not adopt this method as one deliberately chosen as better, and attended with less risk, to the mother than the Cæsarean section, but solely with a view of restraining hæmorrhage which resisted all other methods. In like manner, Porro's first operation was chosen to restrain hæmorrhage, and, ending favourably for the mother, was copied as an improvement on the older method. His case was shortly as follows:—On 27th April, 1876, a dwarf 4 feet 9 inches high, a primipara, entered the hospital of the University of Pavia; she was twenty-five years of age, and her pelvis was deformed as a result of rickets in childhood. Labour set in at 10 a.m. on the 21st of May; and at 4 20 p.m., just six and a half hours afterwards, the Cæsarean section was performed. The uterus not contracting sufficiently to close the wound, and much blood escaping from the sinuses, Porro, without attempting to stop it by the usual means, passed an iron wire round the uterus and ovaries, at the level of the os internum, and compressed it sufficiently to perfectly control the hæmorrhage. When the bleeding had entirely ceased he cut off the rest of the womb. He then passed a drainage tube through Douglas' sac, brought the stump of the uterus to the abdominal wound, and finally closed the abdominal incision with iron wire. The entire operation lasted nineteen minutes. In four days the serre-nœud was removed, all the sutures in a week, and the patient was well in forty days.

Various modifications of the original method have been proposed and performed, but it will be seen that it is a combination of the Cæsarean section with amputation of the supravaginal portion of the uterus at a level with the os internum.

Although the number of cases are too few and the operation too recent to afford satisfactory evidence of its value, yet it will be well to see what advantages it theoretically possesses over the Cæsarean operation. The dangers which attend Cæsarean section are:—1, peritonitis; 2, metritis; 3, hæmorrhage; 4, septicæmia; 5, shock; 6, intestinal obstruction, arising from a coil of intestine being incarcerated in the uterine wound.

By Porro's method the second, third, and sixth of these are abolished; the fourth is enormously reduced, and, if antiseptic precautions are fairly carried out during the operation itself and in the after-treatment, it also ought to be got rid of; the fifth remains a constant factor to both; and

^a *Obstetrical Journal*, p. 418. Oct., 1879.

^b *Lancet*, p. 167. Vol. II. 1828.

the danger of the first is reduced, for peritonitis, depending in a great measure on the presence of irritating fluid in the abdomen, is not so likely to result where the uterus is removed as in the older method, where, with too often a gaping wound, it is left behind.

The operation in itself is extremely simple at first—as in an ordinary Cæsarean case, so far as exposing the uterus. A strong iron or steel wire should then be passed over it, and brought down to its lower portion below the ovaries, as low down as the attachment of the cervix to the fundus of the bladder will allow, ready to be tightened at the proper moment. The uterus is then opened and the child extracted, and the wire ligature compressed until all bleeding has ceased; the uterus is brought out through the abdominal wound, the placenta extracted, if this has not been done before, and it and ovaries cut off. The abdominal cavity having been carefully sponged and cleaned, the edges of the incision in its walls are brought together, and the uterine stump fixed in the lower angle of the wound. The operation has been in some instances modified by bringing the uterus and its contents through the abdominal wound before opening it. This plan is in some instances undoubtedly good, as it affords perfect security against the escape of any of the contents of the wound into the peritoneal sac. If there is great distortion, especially anterior convexity of the spine, and a moderate size of the uterus, it can be easily effected without making the abdominal wound excessively large, and if the womb be twisted on its axis so that it can escape edgeways, it will pass through a comparatively narrow opening. But in the majority of cases—and especially if the uterus be large, containing a large, well-developed child, or a considerable quantity of liquor amnii—the abdominal incision would have to be considerably enlarged, and ovariectomy has shown that the smaller the wound the better the prospect of the patient's recovery; besides, careful approximation of the abdomen to the uterus during the extraction of the child, will in most instances prevent an escape of the fluid into the abdominal cavity. In all cases the iron or steel wire should be passed over the uterus and down to its place before opening it, so as to prevent hæmorrhage, or rather to control it, as soon as the child is delivered. Müller and Fehling, with a view of entirely preventing hæmorrhage, have not only done this, but have constricted the cervix with the wire before opening the uterus. The only objection to this precaution is that it may defeat one of the chief objects of the operation by endangering the child's life. In Fehling's case the child was extracted alive, in Müller's it was dead, before the operation was undertaken.

Whilst, undoubtedly, this practice is safest for the mother, its adoption must depend on its effects with regard to the child. *Prima facie* there does not appear to be any reason why the child should suffer, for the incising of the uterus and extraction of its contents need not occupy

more than a minute—more especially as, since the uterus is afterwards to be removed, and as all danger of hæmorrhage has been taken away by the tightened ligature, there need be no hesitation in making such a large incision in it as will render the extraction of the child perfectly easy, and will prevent any danger of its contracting on and grasping the neck of the infant. *Post mortem* Cæsarean, footling, and breech cases prove that the circulation can be checked and the child saved after a longer period of time than would elapse between the constriction of the cervix, the incision of the womb, and the delivery of the child through the wound.

I have already suggested that, owing to the process of involution, the system being loaded with effete material, a special susceptibility to septic infection exists in the puerperal state. This, to a considerable extent, seems diminished by Porro's operation; instead of the gradual process which follows when the uterus remains, it is got rid of, as it were, by an immediate involution. But not only is this the case, but a source of continued infection is cut off; and this is a decided gain over the ordinary Cæsarean operation.

The mortality after ovariectomy has been reduced to 7 per cent.* There does not appear to be any reason why it should not be as low after this operation. The tumour is not larger; the shock is not greater; the injury to the peritoneum is less, there being no adhesions to be separated; the time occupied in its performance is much shorter; the entire proceeding much easier and simpler, and the patient's general health at least as good, if not better.

The great objection to the operation is the removal of the uterus and ovaries; that the woman is mutilated and rendered sterile, or, as has been stated by some, that it unsexes her. As far as the question of mutilation goes it has not much weight. A mutilation is effected where the breast is removed or a limb amputated, and a similar mutilation is considered justifiable in certain uterine affections in the unimpregnated. If it be justifiable to remove the uterus in cases of chronic inversion, of fibroid tumours, or carcinoma (I do not say anything as to its advisability or otherwise, having regard to the mortality or as a method of treatment), surely it is also justifiable to remove it in the present case. In the former the mutilation is effected in an attempt to save one life, in the latter to preserve two.

The rendering the woman sterile is not an unmixed evil. Not only do the same arguments apply to this objection as hold good for the mutilation, but there are stronger and more forcible ones.

In slightly distorted pelves, according to the amount, the child can be saved, at comparatively slight risk to the mother, by the forceps, by version, or by the induction of premature labour. Therefore, the field of Porro's operation would, in this country at least, be limited to those

* Mr. Spencer Wells. *British Medical Journal*. Nov. 15, 1879.

cases in which the child could be delivered only by embryotomy or Cæsarean section. It is proved that in extreme pelvic distortion the risk to the woman from embryotomy is very great. Therefore, her continued fecundity is a source of frequently recurring peril, of great suffering, and prolonged convalescence.

Women, with their strong maternal affection, bear the pangs of labour cheerfully, in the expectation of having their reward in the baby to love and cherish; but how dreadful is the suffering of the poor creature uncheered by such a hope, who knows that her life is in grave peril, that the result of all will be only a mangled infant, that for her there will be no little one to caress and love, and that the life she has borne through nine months will be extinguished, ere it is born, in order to prolong her own existence, and further, that if she escapes this time, in all probability she will have to go through it all again. For her would not a living child once and future barrenness be an inestimable blessing?

That this is looked upon as a desirable end by some, is shown by the proposals for and the efforts made to occlude the Fallopian tubes, and thus produce artificial sterilisation. The induction of premature labour, when the child is viable, is really conservative for both mother and child, but when practised in extreme distortion before viability it comes practically to mean sterility. No matter how skilfully performed the induction of abortion is always attended with danger to the mother; in it we have sterility with frequently repeated danger. For there is not much difference as to the results between taking away the power of conception, and allowing a woman to conceive, and then destroying the product of the conception. Indeed, the argument may be pushed further and the question asked—Whether is the woman who cannot conceive better off, or she who, having conceived and passed through the full time of utero-gestation, can only be delivered by the destruction of her child? Are not both to all intents and purposes sterile? If, then, experience proves that the maternal mortality of this operation can be reduced not even to that of ovariectomy, for then there could be no doubt of its adoption, but even to the level of that following craniotomy, there will be this decided gain—the saving of the child alive and the preventing all future risk.

This view of the subject appears to afford an answer to Denman's question as to the justifiability of sacrificing child after child, or "whether after many trials she ought to submit to the Cæsarean operation as the means of preserving the child at the risk of her own life."^a In reply to this Dr. Barnes points out that "the conduct of the woman is assumed to be culpable," that "she is subject to her husband," and, arguing on the basis that the Cæsarean section is almost necessarily fatal, decides that we are not justified in resorting to it when craniotomy is safer for

^a Barnes. *Op. cit.*, p. 421.

the mother. But if experience proves hystero-ectomy to be as safe as craniotomy, this difficulty is at once solved.

Does it unsex a woman—does it unfit her for marital life, and does it by so doing lead to domestic unhappiness and discord?

It has been expressly stated that after double ovariectomy, as recommended by Battey, sexual inclination was not interfered with. If it does not disappear after removal of both ovaries it is not likely it would be affected by the amputation of the uterus along with them.

I am not aware that after amputation of the uterus for inversion the woman has become unsexed; so that it appears that although it would be better that the uterus could be left, yet if saving of life is effected the objections as to mutilation, sterility, and unsexing are not of sufficient weight to forbid its performance.

A very important effect has been claimed for this operation by Professor Späth—viz., that it cures osteomalacia. If this be so, in such cases it will prove a decided improvement on ordinary Cæsarean section, for its results are not favourable in osteomalacia. This disease too usually—at least if conceptive power remains—runs on to a fatal termination. The saving of both mother and child and the curing of a hitherto incurable disease would be no trifling benefit to humanity. Like laparotomy, although wider, its range is limited—in a word, it may be said that “it is not practicable when some affection or other of the cervix uteri prevents the formation of a stump.”

It is a matter of considerable moment whether the pedicle can with safety be tied and dropped into the abdomen, or whether it must be treated externally; if it can, the range of the operation will be extended.

In the cases reported the condition of the stump varied considerably. In some a sloughy condition is reported. This is likely to be the case if antiseptic precautions have been neglected, and it is most likely to be found where structural change has occurred, or the cervix has been exposed to considerable pressure from long labour. In others a shrinking of the pedicle requiring the ligature to be tightened has been observed. Both of these conditions contra-indicate intra-peritoneal treatment. Further experience is needed to distinguish the cases in which they are likely to occur.

Hitherto the extra-peritoneal method has alone been attempted. Professor Stadfeldt proposes to tie the pedicle in two portions and drop it. He has not, as far as I am aware, had an opportunity of trying this plan. The division of the ligature would probably meet the shrinking which has been observed; but the stump is very voluminous, and, if simply tied thus and dropped, a large raw surface would be left exposed, giving rise to danger of peritonitis and septic infection; and although, as I have said, this duplex ligature might sufficiently guard against the shrinking of the stump, it might also fail to do so, and thus there would be added the danger of secondary hæmorrhage.

What is required is that the raw surface of the stump should not be left exposed in the cavity—that whilst sufficient constriction was employed to prevent bleeding, yet that it should not be so great as to entirely stop nutrition in the distal end of the stump, and that secondary hæmorrhage should be guarded against. This might be effected by amputating the uterus by a flap operation—that is, instead of cutting it off by a circular incision, leaving a flat surface, it should be removed by a V-shaped one. The flaps could be brought into apposition by sutures, and would probably unite by the first intention. This method would avoid leaving a large raw surface exposed, and the entire stump in the abdominal cavity would be covered with peritoneum, save at the line of junction of the flaps. But here the cut edges of the peritoneum would be in apposition, and we know how rapidly this membrane unites. As the sutures, although applied through the entire depth of each flap, would probably not be sufficient to entirely control the hæmorrhage, this could readily be effected by tying the stump in two equal portions. The best method of doing this would appear to be the Staffordshire knot, the ends of which could be brought down through the cervix and os externum. This would permit of carbolised gut being used, and of the ligature being tightened or loosened at pleasure.

Having now considered the theory of the operation, it remains to be seen what results have followed its adoption in practice, and for making an analysis of the cases the details are entirely deficient.

I have not been able to come at full reports, and so cannot tabulate the cases as I did in the instances of laparo-elytrotomy and Cæsarean sections; nor have we material for forming an opinion as to what cases were moribund, or in which the fatal result was directly attributable to the operation, nor—which is a point of extreme importance for estimating the effect on the result—of the length of time labour had been in progress prior to operation.

There have been 30 cases reported—all on the continent of Europe—with the result of 14 mothers being saved and 16 deaths, or a mortality of 53·3 per cent. This does not look a very encouraging outcome for a procedure which has, undoubtedly, theoretical advantages over Cæsarean section. But it must be borne in mind that the operation is very young (only three years old), that details are wanting to enable us to see how much of the fatality is due to the operation, and that time may show that better results may be obtained, as our experience of it increases. A markedly favourable circumstance, however, must not be overlooked—that is, that it has been successful in places where, for a hundred years, every Cæsarean case has terminated fatally.

Up to the 2nd of June, 1876, when Späth* operated, every Cæsarean case for a century had proved fatal in the Lying-in Hospital of Vienna;

* *American Journal of Medical Science*, p. 509. October, 1879.

and up to the 20th May, 1879, when Professor Tarnier operated, at the Maternité of Paris, a like fatality had followed from 1787.

The adoption of Porro's operation will depend on its success in saving the mother's life, and on this success being greater than that of Cæsarean section. Its results hitherto fairly entitle it to serious consideration; that on the Continent it is favourably regarded is shown by the number of cases operated on in so short a time.

It now remains to be seen what relationship these three operations bear to each other and to embryotomy—how far any, or either, of them are likely to supplant the others, or to do away with the necessity for craniotomy:—

“We can easily agree that we, by sacrificing the child, under such circumstance, deviate from the ideal humanity in obstetrics, and there lies therein an incentive to revise the question.”^a

But there is a higher incentive—the question of the morality of deliberately taking the life of a human being. Another question, too, has to be considered. Whilst a great many, perhaps the majority, of our profession believe that it is perfectly justifiable and morally right to perforate and destroy the live or *viable* infant rather than expose the mother to the risk of the Cæsarean section, there is a minority who hold that under no circumstance is it right thus deliberately to kill a human being, and there are others who, accepting embryotomy as the least of two great evils, are not satisfied in their minds of the justness of the operation. Even if we disagree with them—if we look on their scruples as unreasonable—yet are they not a strong incentive to the reconsideration of the dogma that craniotomy comes first, and that operations on the mother are to be entertained only as a last and final resource?

On reading the records of the Cæsarean operation, one cannot fail to be impressed with the conviction that if the same promptitude and care had been given to it which marks modern surgical operations—if the thought, study, and ingenuity—if the same efforts had been made to perfect it which have been devoted to embryotomy—a very different mortality would have been recorded, a vast saving of life would have been effected, and an inestimable relief have been afforded to men's consciences.

As to how far laparo-elytrotomy and Porro's operation will supplant Cæsarean section, time alone can tell. Each has also a certain limitation; furthermore, we have no evidence as to the results of timely operation. It has been shown that, with all defects of operation, timely Cæsarean section has a mortality of only 25 per cent.; to supplant it in such cases the others will require to show as low a fatality. If the mortality of laparo-elytrotomy reaches this level, I agree with Professor Stadfeldt that it ought to commence the series. In future pregnancies,

^a Stadfeldt. Op. cit., p. 423.

unless the pelvic contraction is very great, the induction of premature labour will get over the difficulty. But experience has shown that, no matter how solemnly we warn a patient of the risk of allowing her pregnancy to go to full term—no matter how earnestly we impress on her the necessity of coming at the proper time to have labour induced—she will in too many cases allow the opportunity to pass, and then the consideration arises as to what operation should be performed. If Porro's method comes up to the standard of success, it will have the advantage that it will remove all chance of future danger.

It may be said—Why not resort to Porro's operation in the first instance, or why not perform laparo-elytrotomy again? In the first instance, laparo-elytrotomy gives a hopeful prospect of a living child, and leaves the power of conception uneffected, so that, if this operation proves as favourable as its supporters assert it ought to be, a prospect of a second child, without largely augmented risk, is given. In the second place, I have already shown that it is doubtful if laparo-elytrotomy can be performed a second time on the same side—at least without excessive peril—and it is doubtful if it can safely be done on the left side, where there is not only less room, but the cicatrix in the vagina from the former operation would prove a formidable bar to its success.

From what we know of the causes of mortality in Cæsarean cases, which principally result from tedious labour, those cases in which many hours have elapsed before medical advice is sought for or given, afford a field for these operations in which we can hope for more favourable results—the special liability to peritonitis, septicæmia, and hæmorrhage, which attends late Cæsarean, not attaching to them.

It seems, therefore, that, with a mortality of 25 per cent., Cæsarean section is indicated in early labour, and either Porro's or laparo-elytrotomy after prolonged. If in such the mortality is found to be low—if the theoretic benefits of the operations are realised, it will be right to resort to them in early cases.

This lesson should, however, be strongly and forcibly taught, that as soon as obstruction is discovered necessitating operative interference, no time should be lost—no delay in operating should be permitted—every hour is of vital consequence—nothing but evil can come from procrastination.

Three alternatives to embryotomy are now before the profession. It behoves it to give them most earnest attention—to put aside dogma and prejudice—to carefully weigh and balance each, so that, with modern knowledge and improved treatment, there may be, if possible, added to the list of triumphs of the surgery of the nineteenth century that of removing from its canons “the only operation recognised and sanctioned by the British profession, which is undertaken with the avowed intention of destroying life.”

TABLE I.—Cases of Laparo-Elytrotomy.

No.	Date	Name of Operator	Age	Cause of Operation	Duration of Labour	Condition of Patient at time of Operation	Result of Operation				Child dead before Operation	Time and Cause of Death of Mother	Whence taken, and Remarks
							Mother		Child				
							Died	Saved	Died	Saved			
1	1831	Ritgen	-	Osteomalacia	—	—	D	-	-	S	-	Secondary hæmorrhage	Hæmorrhage during operation; patient sinking; in order to save child operation abandoned—Cæsarean substituted.
2	1844	L. A. Baudeloque	-	Dwarf	—	—	D	-	-	-	-	Hæmorrhage	Same remarks as in former case.
3	"	L. A. Baudeloque	-	—	—	—	D	-	D	-	-	74 hours	Wounded external and tied common and internal iliac arteries: patient suffered from eclampsia; slight peritonitis found at post mortem.— <i>American Gynecol Trans.</i> , page 214. 1879.
4	1870	T. Gaillard Thomas	40	Pneumonia	—	Almost pulseless; cyanosed breathing, with loud laryngeal rattle—almost unconscious	D	-	-	S	-	Died in an hour	Child premature—badly developed; had hare-lip; though born alive, it died in an hour.— <i>American Jour. Med. Science</i> , page 231. 1878.
5	1874	Dr. Skene	-	Conjugate 2½	48 hours	Exhaustion; pulse 130	D	-	-	-	D	7 hours; exhaustion	Attempts at craniotomy failed.— <i>Ibid.</i> , page 232.
6	1875	Dr. Skene	31	Rickets; conjugate 2½	20 hours	Good	-	S	-	S	-	—	Bladder torn.— <i>Ibid.</i> , page 233.
7	1877	Dr. Skene	37	Conjugate 1½	4 days	Skin hot and dry; tongue coated; temp. 102.5°; pulse 98	-	S	-	S	-	—	Bladder torn.— <i>Ibid.</i> , page 236.
8	"	Dr. Thomas	20	Conjugate 2½	16 hours	—	-	S	-	S	-	—	Bladder torn.— <i>Ibid.</i> , page 240.
9	1878	T. W. Hime	37	Cancer of recto-vaginal septum	20 hours	Bad; had not been able to leave her bed for 11 weeks from debility	D	-	-	S	-	Exhaustion	<i>Lancet</i> , Nov. 9, 1878.
10	"	Dr. Edis	20	Conjugate 2½	17½ hours	Thrombus of vulva	D	-	-	-	-	40 hours; exhaustion	Bladder torn.— <i>Brit. Med. Jour.</i> , Nov. 30, 1878.
11	"	Dr. Gillette	23	Rickets; conjugate 1½	Pains for a week; waters discharged 18 hours	—	-	S	-	-	Decomposed	—	Great difficulty in extracting child from uterus, owing to tonic contractions.— <i>American Jour. Obstetrics</i> , page 98. Jan. 1880.
							7	4	1	6	2		

TABLE II.—*Cæsarean Cases.*

No.	Date	Place of Operation	Reporter or Operator	Age	Height	Cause of Operation and conjugate diameter	Duration of Labour prior to Operation	Condition of Patient	Result to Mother		Result to Child		Cause of Maternal Death, and time of occurrence after Operation	Children reported dead before Operation	Observations, and reference to where Case is recorded
									Saved	Died	Saved	Died			
1	1867	Lambeth Work-house	T. E. Bryant	28	ft. 4 7	Rickets; conjugate 2 in.	About 3 days	Bad; circulation hurried; tongue dry; patient restless Strength fair; pulse 160	-	D	S	-	2 days	-	<i>Obstetrical Trans.</i> Vol. VI., page 197.
2	1868	—	N. T. Sadler	21	under average	Contracted pelvis	6 days	Good	-	D	-	-	Shock; 24 hrs.	Dead before operation	<i>Edin. Med. Jour.</i> Vol. X., page 268.
3	"	Lady Berkley's Lying-in Institution, Kingston, Jamaica	W. Anderson	25	-	Rickets	20 hours	Good	S	-	S	-	—	—	Black woman. — <i>Edin. Med. Jour.</i> Vol. X., page 142.
4	1868	London	R. Greenhalgh	22	-	Mollities osium	Nearly 5 days	Skin hot and dry; tongue furred; pulse 140, feeble; tenderness over abdomen; headache; vagina hot, swollen, and tender	-	D	-	-	80 hours	Dead before operation	Uterine wound found gaping after death. — <i>Obstetrical Trans.</i> Vol. VII., page 275.
5	"	London	R. Greenhalgh	28	-	Rickets	26 hours, when efforts to deliver by crotchet were made; not stated; how long they lasted	Good up to time efforts to deliver by crotchet were made; then shock and exhaustion set in	-	D	-	-	67 hours	Craniotomy	On opening uterus it was found to have been lacerated; foetus found to have escaped through rent. — <i>Obstet. Trans.</i> Vol. VII., page 220.
6	"	—	Sir J. Simpson	24	-	Distorted pelvis	About 4 days	Patient almost in a state of syncope	-	D	-	-	3 days	1	Valn efforts to turn had been made; posterior lip of uterus lacerated transversely. — <i>Edin. Med. Jour.</i> Vol. XI., page 885.
7	1868	London	R. Greenhalgh	20	-	Cancerous tumour	—	Stomach irritable; tongue white; face pale; pulse 74, firm, and steady	S	-	S	-	—	—	Child little over seven months; died after operation; ether spray to abdomen. — <i>Medical Times and Gazette.</i> Vol. I., 1869.
8	"	Stamford	Dr Newman	27	-	Cancer	3 days	—	S	-	S	-	—	—	<i>Obstet. Trans.</i> Vol. VIII., page 220.

10	"	Guy's Hospital	J. Braxton Hicks	37	4	0	Contracted outlet	A few hours after labour was induced; fortnight before term	Good	tongue furred; vagina tender and inflamed	-	D	-	-	-	of peritonitis and septicaemia; uterus nearly black, as if gangrenous	4 days, of exhaustion	-	Obstet. Trans. Vol. X., page 46.	page 260.
11	"	London Surgical Home	Baker Browne John Taylor	23	-	-	Contracted pelvis	14 hours	-	-	S	-	-	-	-	Died 6 weeks after operation of embolism	Uterus closed by silver-wire sutures.— <i>Lancet</i> . Vol. I. 1868.	-		
12	1870	Ellesmere Workhouse	J. W. Roe	35	11	4	Mollities osium	114 hours	Suffering from cough; pulse 120; marked symptoms of exhaustion	-	-	D	-	-	4 days 5 hrs., of bronchitis and peritonitis	-	<i>Lancet</i> . Vol. II. 1870.	-		
13	"	London Hospital	Dr. Head	35	5	4	Mollities osium	Not stated	Not stated	-	-	D	-	-	14 hours; not stated	-	<i>Medical Times & Gazette</i> . Vol. I. 1870.	-		
14	"	Glasgow	A. Neilson	33	4	9	Lateral & antero-posterior curvature; contracted pelvis; rickets	58 hours	Not stated; membranes decomposing	-	-	D	-	-	16 hours, of hæmorrhage and exhaustion	-	Great hæmorrhage; at autopsy uterus found of bluish green colour.— <i>Lancet</i> . Vol. I. 1870.	-		
15	"	Streatham	J. Braxton Hicks	40	-	-	Tumour (myoma); blocking up pelvis	Several hours	Bad; pulse over 100; tongue glazed & brown; teeth covered with sordes	-	-	D	-	-	3½ days, of exhaustion; there had been profuse hæmorrhage	-	Sutures through both uterine and abdominal walls; child seventh-month; lived a short time.— <i>Obstet. Trans.</i> Vol. XI. Child lived nine hours.— <i>Obstet. Trans.</i> Vol. XIII., page 131. <i>Edin. Med. Jour.</i> Vol. XVII., page 341.	-		
16	1871	Wolverhampton	H. Gillbons	22	3	10	Small pelvis	Not stated	Not stated	-	-	D	-	-	40 hours; not stated	-	<i>Lancet</i> . Vol. I., page 79. 1878.	-		
17	"	Kintore	A. Inglis	-	3	6	Projection of sacrum; rickets	Over 48 hours	Almost in state of syncope	-	-	D	-	D	3 days	-	-	-	-	
18	"	Romford	N. F. Davey	30	3	8	Rickets	23 hours	Pulse weak and rapid; vagina hot, dry; offensive smell	-	S	-	-	-	-	-	-	-	-	
19	1872	Leeds	Phillip Foster	22	-	-	Conjugate 1 in.	48 hours	Liq. amnii escaped 48 hours	-	S	-	-	-	-	-	-	-	No chloroform.— <i>Lancet</i> . Vol. I. 1872.	
20	"	Ballarat District Hospital	Thomas Hellas	24	-	-	Uterus wounded during operation for ovarian tumour	Not in labour	-	-	S	-	-	-	-	-	-	-	Nine or ten silver sutures in uterus.— <i>Land. Med. Record</i> , Jan. 15, 1876. Page 25.	

TABLE II.—*Cesarean Cases.*

No.	Date	Place of Operation	Reporter or Operator	Age	Height	Cause of Operation and conjugate diameter	Duration of Labour prior to Operation	Condition of Patient	Result to Mother		Result to Child		Cause of Maternal Death, and time of occurrence after Operation	Children reported dead before Operation	Observations, and reference to where Case is recorded
									Saved	Died	Saved	Died			
1	1857	Lambeth Work-house	T. E. Bryant	28	ft. 4 7	Rickets; conjugate 2 in.	About 3 days	Bad; circulation hurried; tongue dry; patient restless	-	D	S	-	3 days	-	<i>Obstetrical Trans.</i> Vol. VI., page 197.
2	1863	—	N. T. Sadler	21	under average	Contracted pelvis	6 days	Strength fair; pulse 160	-	D	-	-	Shock; 24 hrs.	Dead before operation	<i>Edin. Med. Jour.</i> Vol. X., page 268.
3	"	Lady Berkley's Lying-in Institution, Kingston, Jamaica	W. Anderson	25	-	Rickets	20 hours	Good	S	-	S	-	—	—	Black woman.— <i>Edin. Med. Jour.</i> Vol. X., page 142.
4	1865	London	R. Greenhalgh	32	-	Mollities ossium	Nearly 5 days	Skin hot and dry; tongue furred; pulse 140, feeble; tenderness over abdomen; headache; vagina hot, swollen, and tender	-	D	-	-	90 hours	Dead before operation	Uterine wound found gaping after death.— <i>Obstetrical Trans.</i> Vol. VII., page 275.
5	"	London	R. Greenhalgh	28	-	Rickets	26 hours, when efforts to deliver by crotchet were made; not stated how long they lasted	Good up to time efforts to deliver by crotchet were made; then shock and exhaustion set in	-	D	-	-	67 hours	Craniotomy	On opening uterus it was found to have been lacerated; foetus found to have escaped through rent.— <i>Obstet. Trans.</i> Vol. VII., page 220.
6	"	—	Sir J. Simpson	24	-	Distorted pelvis	About 4 days	Patient almost in a state of syncope	-	D	-	-	3 days	1	Vain efforts to turn had been made; posterior lip of uterus lacerated transversely.— <i>Edin. Med. Jour.</i> Vol. XI., page 885.
7	1866	London	R. Greenhalgh	30	-	Cancerous tumour	—	Stomach irritable; tongue white; face pale; pulse 74, firm, and steady	S	-	S	-	—	—	Child little over seven months; died after operation; ether spray to abdomen.— <i>Medical Times and Gazette</i> , Vol. I., 1866.
8	"	Stamford	Dr. Newman	27	-	Cancer	8 days	—	S	-	S	-	—	—	<i>Obstet. Trans.</i> Vol. VIII., page 241.

10	"	Guy's Hospital	J. Braxton Hicks	37	4	0	Contracted outlet	A few hours after labour was induced; fortnight before term	Good	Pulse 100; skin hot; tongue furred; vagina tender and inflamed	-	D	-	6 days 16 hrs., of peritonitis and septicæmia; uterus nearly black, as if gangrenous	<i>Obstet. Trans.</i> Vol. X., page 45.
11	"	London Surgical Home	Baker Browne John Taylor	23	-	-	Contracted pelvis	14 hours	-	-	S	-	-	Died 6 weeks after operation of embolism	Uterus closed by silver wire sutures.— <i>Lancet.</i> Vol. I. 1868.
12	1870	Ellesmere Work-house	J. W. Roe	35	little over 4 ft.	-	Mollities osium	114 hours	Suffering from cough; pulse 120; marked symptoms of exhaustion	-	D	-	4 days 5 hrs., of bronchitis and peritonitis	<i>Lancet.</i> Vol. II. 1870.	
13	"	London Hospital	Dr. Head	35	5	4	Mollities osium	Not stated	Not stated	-	D	-	14 hours; not stated	<i>Medical Times & Gazette.</i> Vol. I. 1870.	
14	"	Glasgow	A. Neilson	33	4	9	Lateral & antero-posterior curvature; contracted pelvis; rickets	58 hours	Not stated; membranes decomposing	-	D	-	16 hours, of hæmorrhage and exhaustion	Great hæmorrhage; at autopsy uterus found of bluish green colour.— <i>Lancet.</i> Vol. I. 1870.	
15	"	Streatham	J. Braxton Hicks	40	-	-	Tumour (myoma); blocking up pelvis	Several hours	Bad; pulse over 100; tongue glazed & brown; teeth covered with sordes	-	D	-	34 days, of exhaustion; there had been profuse hæmorrhage	Sutures through both uterine and abdominal walls; child seventh-month; lived a short time.— <i>Obstet. Trans.</i> Vol. XI.	
16	1871	Wolverhampton	H. Gibbons	22	3	10	Small pelvis	Not stated	Not stated	-	D	-	40 hours; not stated	Child lived nine hours.— <i>Obstet. Trans.</i> Vol. XIII., page 131.	
17	"	Kintore	A. Inglis	-	3	6	Projection of sacrum; rickets	Over 48 hours	Almost in state of syncope	-	D	-	3 days	<i>Edin. Med. Jour.</i> Vol. XVII., page 341.	
18	"	Romford	N. F. Davey	30	3	8	Rickets	23 hours	Pulse weak and rapid; vagina hot, dry; offensive smell	S	-	-	-	<i>Lancet.</i> Vol. I., page 79. 1878.	
19	1872	Leeds	Phillip Foster	22	-	-	Conjugate 1 in.	48 hours	Liq. amnii escaped 48 hours	S	-	-	-	No chloroform.— <i>Lancet.</i> Vol. I. 1872.	
20	"	Ballarat District Hospital	Thomas Hellas	24	-	-	Uterus wounded during operation for ovarian tumour	Not in labour	-	-	S	-	-	Nine or ten silver sutures in uterus.— <i>Land. Med. Record.</i> Jan. 15, 1876. Page 25.	

TABLE II.—*Cæsarean Cases—continued.*

No.	Date	Place of Operation	Reporter or Operator	Age	Height	Cause of Operation and conjugate diameter	Duration of Labour prior to Operation	Condition of Patient	Result to		Causes of Maternal Death, and time of occurrence after Operation	Children reported dead before Operation	Observations and reference to where Case is recorded
									to Mother	to Child			
									Saved	Died			
21	1872	City-road Work-house, London	G. E. Yarrow	34	4 2	Rickets; conjugate 1½	About 26½ hrs.	Not stated; 11q. amniotic escaped 24 hours	-	S	-	-	<i>Lancet.</i> Vol. II. 1872.
22	1873	Wisebeach	D. C. Nicholl	30	-	Cancer	Over 26 hours	Bad after operation	-	-	-	1	Uterus infiltrated with cancerous matter; uterine suture. — <i>Lancet.</i> Vol. I. 1878.
23	1874	Brooklyn, U.S.	Cornellus Olcott	30	-	Fibrous tumour	9 hours	Extreme exhaustion; almost in articulo mortis	S	S	-	-	<i>American Journal of Obstetrics</i> , April, 1879. Page 312.
24	1875	Bury, Lancashire	John Parkes	33	-	Rickets	10 or 12 hours	Good	S	-	-	1	Uterine suture. — <i>Lancet.</i> Vol. I., page 240. 1876.
25	"	Own Home, London	Dr. Routh; reported by Dr. Oswald	29	4 0	Rickets; conjugate 1½	16 hours	—	-	-	-	-	Uterine suture of carballed gut, which became untied. — <i>Obstetrical Trans.</i> Vol. XVII., page 378.
26	1876	Guy's Hospital	A. Galabin	41	-	Obliteration of vagina	7 days	Greatly exhausted	-	-	-	1	<i>Obstetrical Trans.</i> Vol. XVIII., page 252.
27	"	Temperance Hospital, London	J. Edmunds	28	-	Tumour in pelvis	60 hours	Good	S	-	-	-	<i>Lancet.</i> Vol. II. 1876.
28	"	Guy's Hospital	A. Galabin	36	-	Carcinoma of os uteri	—	Bad; evidence of septicæmia; pulse 150; temp. 102°	-	-	-	1	<i>Obstetrical Trans.</i> Vol. XVIII., page 286.
29	1877	Stanton Lees	E. M. Wrench	28	not larger than girl of 16 yrs.	Small but not deformed pelvis	35 hours	Not much exhausted	S	-	-	-	<i>Lancet.</i> Vol. II., page 5. 1878.
32	"	Middlesex Hospital, London	H. Morris	40	-	Mollities ossium	32 hours	Bad	-	-	-	1	Woman exhausted from long labour and attempts at craniotomy. — <i>Lancet.</i> Vol. I., page 488. 1878.
30	1878	Guy's Hospital	J. Braxton Hicks	-	-	Cancerous tumour of recto-vaginal septum	About 8 hours	Temp. 102°; pulse 180; tongue brown; prostration	-	S	-	-	<i>Obstetrical Trans.</i> Vol. XX., page 106.
31	"	Baroda	Surg. Major Cody	36	dwarf	Exostosis, from rind of pelvis	3 days	Very bad	S	-	-	-	<i>Lancet.</i> Vol. II., page 476. 1878.

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1879-80.

President—PROFESSOR DILL, M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

Tuesday, March 2, 1880.

PROFESSOR DILL, President, in the Chair.

DR. HARKIN read a paper "On some Important Therapeutic Effects of Chlorate of Potassium." [It will be found at p. 398.]

DR. MEHARRY congratulated Dr. Harkin upon the success of his cases. In ordinary practice most men combined iron with the chlorate. He did so, but always attributed the good effects to the iron. He would watch it now with interest.

DR. WITHERS wished to see its local application more extensively used. He asked for an explanation of its action. Did it act by mild astringency or by stimulation? He had seen it lately tried in the case of a large indolent sore with success after everything had failed.

DR. MOORE thought that Dr. Harkin was too sanguine in his opinion about the efficacy of the chlorate. He detailed his experiences of it in many and different diseases, thought that often it was uncertain and useless; but, upon the whole, there was no doubt that chlorate of potassium had won for itself an honourable place in *Materia Medica*. It was, unfortunately, used so often in combination with iron that there was great difficulty in coming to a conclusion about which agent did the good.

DR. J. W. BROWNE said his father had used this medicine so extensively that he was known amongst the students as "Chlorate of Potash." Perhaps he inherited some of the veneration for the drug, and used it often, and more than once with marvellous success. As regards its use in mammary abscess—of which he had four severe cases last year—he injected a solution, and at the same time gave it internally, with most decided benefit. He could say the same of its use in ulcers, only he would remind anyone about to try it that a solution of more than five grains in the ounce would smart considerably. He then detailed his treatment of burns—first he applied a poultice, and after it came off he had a solution of the salt laid upon the burns, and, in many cases, in twenty-four hours, a new growth of a quarter to a half inch of skin could

be seen. He referred to a paper by Mr. Jonathan Hutchinson, and said he could fully corroborate his statements about the very decided benefit of the powdered salt in phagedenic ulceration. He then detailed some important effects which he had observed from chlorate of potassium in various diseased conditions, especially gonorrhœa, in which disease he made a mixture of the salt containing 1 drachm in 2 ozs. Two drachms of this were to be used every second hour for the first twelve hours, and always with great success.

DR. WHITLA had a good deal of experience of the use of chlorate of potassium in the two widely different classes of cases in the Children's Hospital and the Old Charitable Hospital. In the cases of children's disease he must say they simply could not do without it. How it acted he would not pretend to say, still less would he pretend to go into any chemical theory, but he was satisfied it produced very decided change of action in the secretion of most mucous membranes in unhealthy children. He had watched narrowly its action in cases of tonsillitis and pharyngitis, and though he *thought* it did great good, one thing he was *positive* about—viz., that if continued beyond the proper time it kept up and increased the congestion. This he had often demonstrated, and the moment its use was stopped the throat got immediately better. He then detailed some cases of chronic ulcer in the aged where its use was decidedly beneficial.

PROFESSOR DILL said at this stage in the history of the profession and in the nineteenth century it was refreshing to hear a paper brought up by a man like Dr. Harkin upon a purely practical subject of such therapeutic interest. He then described the general course pursued by most consultants, nearly all of whom, in his experience, contented themselves by making out the diagnosis of the case. He referred at length to the effect in this direction of the teaching of Laennec and his disciples, many of whom laughed at the idea of treating disease with medicines. He was glad, however, to see that the tendency was now reviving of treating disease with medicines. He expatiated upon the therapeutic action of the drug and the evidences of its decomposition into the chloride and oxygen. He thought as regarded the treatment of burns that the old plan of allowing the blisters to remain without puncture was the best, and he felt he would be slow to follow out the line laid down by Dr. Browne. Upon the subject of enlarged glands he said we required to know a good deal more than we did about the laws which governed diseased action in these peculiar organisms; how common it was to meet with enlarged glands which resisted all treatment, and which, as far as we were able to tell, differed in no way from those which disappeared as if by magic.

CLINICAL RECORDS.

A Case of Hyperpyrexia treated by External Application of Cold. By
WILLIAM R. EVANS, M.A., M.D., Univ. Dub.; L.R.C.S.I.

THE symptoms in acute rheumatism formerly described as due to cerebral rheumatism, or to metastasis of the rheumatic inflammation, have been shown by several observers to depend often, if not always, on increased body-temperature.

According to Professor Senator "the phenomena of this complication are very similar to those observed to follow the exposure of men or animals to excessive heat, and known as heat-apoplexy or sunstroke—in both cases the abrupt rise of temperature is the earliest and most striking symptom of impending danger; and so great is the danger that death ensues after a very brief interval unless the temperature can be reduced."

Wilson Fox writes in the same strain, but adds, "the patient has no chance of life except in the external application of cold, as, with that exception, no therapeutic measure has hitherto proved to be of the slightest effect in checking the rise of temperature, especially if that rise be accompanied with cessation of perspiration and disappearance of pain in the joints."

The late Dr. R. B. Todd pointed out the non-inflammatory nature of the brain affection in this complication, yet, as to treatment, he declares that his was "negative as to any good effects," and both the cases he quotes died. So likewise terminated in death 19 out of the 22 cases quoted by Dr. W. Fox in his memoir. The 3 who recovered were treated by the external application of cold.

The following case (treated in that way and terminating in recovery) presented all these dangerous symptoms; and, as they all speedily disappeared after the application of cold and consequent reduction of temperature, we may (so far as one case goes) reasonably assume that all these grave and dangerous symptoms—symptoms of the so-called cerebral rheumatism—were simply due to excessive heat of body:—

On the 14th of April, 1875, H. V., aged forty-five, got a wetting, and, not being able to change his clothes for some hours, received a severe chill. He shivered and vomited, so he stayed in bed and took some purgatives. Four days later, when I first saw him, he had all the symptoms of a severe attack of rheumatic fever; the joints of all his extremities were swollen and painful, especially his knees and ankles and the right wrist; his tongue greatly furred; his urine scanty and high-

coloured; perspiration excessive, with a strongly-marked acid odour; pulse 96; temperature 99.5° ; heart quite free. He was placed on full doses of the alkalies— $\frac{1}{2}$ gr. of ext. opii every fourth hour, and his affected joints were wrapped in wadding. Until the morning of the 28th—the tenth day of his illness—there was nothing special in his case, he continued to progress fairly well, his pulse never exceeding 100; his morning temperature about 99.5° ; his evening 101° , but never higher. On this day there appeared the usual signs of pericarditis—his temperature rose to 102° , and his pulse to 120. He complained much of pain over heart, his joints, however, continuing affected. Three leeches were applied over heart, with complete relief to pain. The following day—the eleventh of his illness—the heart signs were unchanged; his temperature still remained at 102° ; pulse 120; but he was exceedingly restless and sleepless. In the evening of same day his restlessness had greatly increased; he had slept none; his pulse was 120; temperature 105° ; respiration 46; friction sounds unchanged; no increase of cardiac dulness; wandering slightly; perspiring freely; passed 30 ozs. of very high-coloured urine during day. He was ordered a scruple of quinine, to be repeated in two hours, in the hope of reducing his temperature and thus inducing sleep. It had its desired effect, he slept for about two hours, and in the morning his temperature was 102° ; pulse 112; respiration 44; no apparent change in the other signs or symptoms. By evening he seemed better; his temperature was 102.8° ; he had slept for several hours during the day; was not so restless; and had passed 60 ozs. of urine. One dose of the quinine was given at bedtime, in the hope of further reducing his temperature. The next day—the thirteenth of his illness—he was in every respect worse—all his joints were engaged, except his hips; the friction sound over base of heart louder and rougher; and at apex a soft murmur was, for the first time, noticed. His temperature had risen to 104.2° ; pulse 112; respiration 42. He passed a restless day; his temperature in the evening was still 104.2° , although he got 20 grains of quinine in the morning; he had slept none; complains much of thirst; heart signs unchanged; no increase of dulness; perspiring freely. The following morning (the fourteenth of his illness) he presented all the alarming symptoms characteristic of cerebral rheumatism; he lay insensible, his breathing quick (60 in the minute), irregular, shallow, and jerky; his colour an ashy gray; pupils contracted and insensible to light; his teeth clenched; and the formerly abundant perspiration entirely absent; his temperature 106.2° ; his pulse 130. He was apparently dying. As the quinine had totally failed to reduce his temperature, I determined to endeavour to do so by the application of cold, and, as circumstances prevented a bath being employed, I had him sponged over with iced water, and on napkins, wrung out of iced water, spread over his body, ice was allowed to melt. The treatment was commenced at 9 o'clock, the thermometer marking

106.2° in his mouth; at 9 40 it marked 105.4°; at 10, 104.8°; and by 12 o'clock 101°. In these three hours a great change had taken place, he was sensible, but made no complaint of pain; his respiration had fallen to 46, his pulse to 112, and he was able to swallow. He slept for a short time, but at 3 o'clock the thermometer marked 102°, so I had him again rubbed with the ice; this in an hour's time brought his temperature down to 100°; he then fell asleep and had a very tolerable night, sleeping off and on for more than four hours. The next morning he was still quite free from pain in any of his joints, and no perspiration had appeared; his pulse 130; temperature 103°. He begged that the ice might be re-applied as he felt it so grateful the previous evening, so he was again sponged over with iced water, and iced clothes laid over him. This in two hours brought down the thermometer to 101°, but by night it again rose to 104°, so the ice was applied for the fourth time with the effect in less than two hours of bringing his temperature down to 100°; his pulse falling to 88; respiration 30. In a short time after the ice was removed he complained of pain in his joints, and an abundant perspiration made its appearance; he fell into a calm and quiet sleep (after a sedative dose of opium) and passed a good night. His kidneys, too, commenced to act very freely; he passed 130 ozs. of high-coloured urine during this day, and for the two following days 140 ozs. each day of a deep colour, and depositing no sediment. From this day he made uninterrupted progress—the disease ran its course, and not till the twenty-sixth day of his illness was he apyrexial. The treatment by cold had no effect on the course of the disease, but it certainly saved the patient from death.

OPIUM IN URÆMIC CONVULSIONS.

IN a clinical lecture by Dr. Austin Flint, Sr., reported in the *N. Y. Med. Jour.*, March, 1880, that distinguished physician enunciates a mode of treatment of uræmic convulsions which few probably in this country have ventured to adopt. He states that there is no question in his mind that the administration of morphia in pretty free doses is of considerable service in quite a number of cases of uræmic poisoning; and that it seems to do good by placing the system in such a condition that it will tolerate the presence of a large quantity of urea in the blood. The patient whose case was the subject of the lecture was given hypodermically 60 minims of Magendie's solution of morphia in doses of x. to viij. minims between 7 30 p.m. and 4 a.m. Pilocarpine and infusion of digitalis were also given subsequently, and a rapid recovery took place.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday, March 27, 1880.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	824	882	18	18	36	6	24	28	6	36.5
Belfast, -	182,082	543	447	1	5	—	—	17	15	6	31.9
Cork, -	91,965	221	250	—	5	24	—	1	5	8	34.2
Limerick, -	44,209	121	104	—	—	—	—	—	7	3	30.6
Derry, -	30,884	69	64	—	—	—	—	1	2	4	27.0
Waterford, -	30,626	65	75	—	—	2	—	—	3	1	31.9
Galway, -	19,692	40	32	—	—	—	—	—	3	—	21.1
Sligo, -	17,285	23	24	—	—	—	—	—	1	—	18.0

Remarks.

The mortality in twenty large English towns, inclusive of London (in which it was 21.4), having an aggregate population of 7,499,468, was at the rate of 21.7 per 1,000 of the population annually. The death-rate was 24.7 per 1,000 in Glasgow, and 23.5 in Edinburgh. The average annual mortality represented by the deaths registered in sixteen principal town districts in Ireland, having an aggregate population of 862,144, was at the rate of 33.0 per 1,000. In the Dublin registration district, when the deaths (28) of persons admitted into public institutions from without the district are deducted, the death-rate was 35.3 per 1,000. Within the municipal boundary of Dublin it was 38.0. In the Dublin registration district zymotic affections were credited with 170 deaths, compared with an average of 134.4 in the previous ten years. There was but little change in the relative fatality of the various zymotics except in the case of diphtheria, which was returned as the cause of death in 6 instances, compared with 1 death in the preceding four weeks. Typhus caused 7 deaths, enteric fever 16, and continued fever of undetermined type 5 deaths. In Belfast whooping-cough was

less fatal. In Cork the epidemic of scarlatina seems to have diminished in severity. The open weather still further reduced the mortality from diseases of the respiratory organs in Dublin. The deaths numbered 190 (average = 199·4), including 145 from bronchitis (average = 155·0) and 24 from pneumonia (average = 26·6). At the close of the period there were under treatment in the principal Dublin hospitals—of smallpox 45 cases, measles 12, scarlatina 86, typhus fever 53, enteric fever 24, and pneumonia 7 cases. A fatal case of “simple cholera” was registered in the week ending March 27.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of March, 1880.

Mean Height of Barometer,	-	-	-	30·041 inches.
Maximal Height of Barometer (on 8th at 9 a.m.),	-	-	-	30·523 „
Minimal Height of Barometer (on 2nd at 9 p.m.),	-	-	-	28·980 „
Mean Dry-bulb Temperature,	-	-	-	44·8°
Mean Wet-bulb Temperature,	-	-	-	42·8°
Mean Dew-point Temperature,	-	-	-	40·4°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·250 inch.
Mean Humidity,	-	-	-	85·1 per cent.
Highest Temperature in Shade (on 30th),	-	-	-	58·4°
Lowest Temperature in Shade (on 28th),	-	-	-	30·9°
Lowest Temperature on Grass (Radiation) (on 23rd and 28th),	-	-	-	29·0°
Mean Amount of Cloud,	-	-	-	51·1 per cent.
Rainfall (on 16 days),	-	-	-	3·129 inches.
General Directions of Wind,	-	-	-	E.S.E. & S.E.

Remarks.

Like February, this was an open month; but, unlike February, atmospherical pressure was high after the first few days, and conditions were generally anticyclonic. The air was damp for March, and a foggy state of the atmosphere was noted in Dublin on as many as 11 days. South-easterly winds were remarkably prevalent, owing to the persistence of an anticyclone over the North Sea from the 8th to the 29th inclusive. Very rough blustering weather characterised the first few days of the month. At 8 a.m. of the 1st the barometer stood at 28·28 inches at Stornoway in the Hebrides. A W.S.W. gale sprang up in Ireland, and in Dublin squalls of sleet and “graupel,” or soft hail, occurred at intervals. A subsidiary depression on the 2nd caused a heavy fall of sleet and snow, followed by torrents of rain. The rainfall in Dublin during the 24 hours ending 9 p.m. of the 2nd measured 1·342 inches. On the 7th the barometer rose rapidly, reaching 30·523 inches

at 9 a.m. of the 8th; but from the 9th to the 12th inclusive very unpleasant, dull, damp, foggy weather prevailed in Dublin. On the 12th a downpour of rain took place. It is to be noted that at 8 a.m. of this day the barometer reached the exceptional height of 30·97 inches at Stockholm. In Dublin the weather remained overcast, damp, and rainy until the 18th, when the sky cleared and a spell of fair weather set in, cool frosty nights being followed by mild sunny days. A temporary break-up occurred on the 25th and 26th, which were dull and rainy on the east coast of Ireland, but afterwards the bright sunshine by day and the frosts by night returned. The lowest temperature was registered on Easter morning, the 28th. In central England the daily range of the thermometer was very great towards the close of the month. A difference of 30° or upwards between the lowest night and the highest day readings in the shade was often observed. At Cambridge the maximal temperature on the 24th was 60°, and the minimal a few hours later was 24°—a range of 36°. In Dublin snow or sleet fell on the 1st and 2nd, hail on the 1st and 25th. The heaviest rainfall in 24 hours from 9 a.m. to 9 a.m. was ·924 inch on the 2nd.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

HYDRATE OF CHLORAL.

DR. H. H. KANE, of New York City, U.S.A., specially requests members of the profession with any experience whatever in the use of Hydrate of Chloral to answer the following questions, and give any information they may possess with reference to the literature of the subject:—1. What is your usual commencing dose? 2. What is the largest amount you have administered at one dose, and the largest amount in twenty-four hours? 3. In what diseases have you used it (by the mouth, rectum, or hypodermatically), and with what results? 4. Have you known it to affect the sight? 5. Have you ever seen cutaneous eruptions produced by it? 6. Do you know of any instance where death resulted from or was attributed to its use? If so, please give full particulars as to disease for which given; condition of pulse, pupils, respiration and *temperature*; manner of death; condition of heart, lungs and kidneys; general condition, age, temperament, employment, &c., &c. If an autopsy was held, please state the condition there found. 7. Have you seen any peculiar manifestations from chloral—as tetanus, convulsions, or delirium? 8. Do you know of any cases of the chloral-habit? If so, please state the amount used, the disease for which the drug was originally adminis-

tered, the person's age, temperament, and the present condition of the patient. Physicians are earnestly requested to answer the above questions, in order that the resulting statistics may be as full and valuable as possible. All communications will be considered strictly confidential, the writer's name not being used when a request to that effect is made. Address all letters to Dr. H. H. Kane, 366, Bleecker-street, New York City.

GLYCÆMIA IN ASPHYXIA.

M. DASTRE has brought before the Institute of Medicine some experiments to reconcile the statement of Bernard that destruction of glycogen in the liver, and the disappearance of the sugar in the blood, attended prolonged asphyxia, with contrary views held by other physiologists. By means of a simple arrangement M. Dastre put the trachea of an animal in communication with a caoutchouc bag having a capacity similar to that of the lung, so that the animal breathing in this bag comes to breathe confined air. A cock on the tube joining the bag to the trachea allows the animal to breathe free air at the operator's will. Twenty-six experiments having given uniform results, it is sufficient to mention one. When respiration was free the glucose was represented by 1.28, when the animal had to respire the confined air the glucose was 2.53; on re-establishing open-air breathing the glucose fell to 1.77, then 1.70, down to the initial 1.28. Asphyxia being again tried, but to a less degree than at first, the quantity of sugar rises to 2.28. The quantity of sugar varies therefore inversely with the quantity of the oxygen. In a second series of experiments M. Dastre has substituted rarefied air for confined air, and with the same results. Also he has examined the diabetes resulting from curari poisoning, and has been led to infer that the diabetes of curari is only a form of the diabetes of asphyxia.—*L'Union Médicale*.

S. W.

BORACIC ACID IN EYE DISEASES.

IN an article upon the "Antiseptic Treatment of Suppuration of the Middle Ear," published in the *Archiv für Ohrenheilkunde*, Vol. XV., Part I., Bezold described the excellent results which he had obtained in this affection from finely powdered boracic acid, applied by insufflation to the external auditory meatus. An abstract of this paper, which appeared in the October number of the *American Journal of Otology*, induced Dr. Theobald, Surgeon to the Baltimore Charity Eye and Ear Dispensary, and Ophthalmic and Aural Surgeon to St. Vincent's Hospital, Baltimore, to experiment with the new remedy. The results which he obtained in a number of cases of otorrhœa with solutions of the acid (five to ten grains to the ounce) were not less favourable than those Bez

had reported as following its application in substance. The prompt manner in which purulent discharges from the mucous membrane of the tympanal cavity were checked by these solutions, suggested the idea that where similar discharges from the conjunctiva existed, equally good results might be obtained from their use as a collyrium. Dr. Theobald first ascertained that a four-grain solution when dropped into the eye caused absolutely no irritation; and even when an irritation previously existed it produced a decidedly grateful sensation. He is disposed to ascribe the good effects of the boracic acid in the varied cases of ocular affections, of which he gives particulars, more to its well-known antiseptic than to its astringent action. In the treatment of eye diseases he is confident that the acid has open to it a wide field of usefulness; and states that to those who are sufficiently familiar with this department of surgery to appreciate the immense advantage which will accrue from the possession of an agent capable of arresting purulent and muco-purulent discharges from the conjunctiva, and yet so bland in its action as to cause no irritation, even in phlyctenular keratitis, this prediction will not seem unreasonable. The affections to which it seems especially adapted are—purulent conjunctivitis, including gonorrhoeal ophthalmia, and ophthalmia neonatorum; catarrhal conjunctivitis; asthenopia from whatever cause arising, and the conjunctival hyperæmia which usually accompanies it. He suggests its use, also, in other affections—*e.g.*, ophthalmic neonatorum, granular conjunctivitis, phlyctenular ophthalmia, traumatic corneitis, and in atropinism, in all of which he has proved its utility.—*N. Y. Med. Rec.*, Feb. 7. In a subsequent number of the *Record*, Dr. E. Gruening, Surgeon to the New York Eye and Ear Infirmary, states that Dr. Theobald's claim for originality in the use of boracic acid in eye diseases is unfounded, and that it has been employed by ophthalmologists for many years.

FLOATING KIDNEYS IN CHILDREN.

In the *Hospitals-Tidende*, Nov. 26, 1879, Professor Hirschsprung, of Copenhagen, discusses the diagnosis and etiology of floating kidneys in children, and reports two cases occurring in his own experience. The one was in a thin, anæmic boy of seven years, who had complained for some time of pain in the right hypochondrium. All the bodily functions seemed to be properly performed, and the pain was not dependent on any condition of the intestines. A careful examination showed on the right side, between the twelfth rib and the crest of the ilium, a tumour, somewhat concealed beneath the ribs anteriorly. The boy was chloroformed, and then the tumour appeared below the ribs, and could be moved up and down. The left kidney was in its proper place, and immovable. The second case was in a boy of eight years. For a number of years he had been obliged to rise several times in the night to mictu-

rate. He had always been thin and puny, and of late had had frequent attacks of vomiting. The abdomen was somewhat retracted, soft, and rather tender in the epigastrium. Under the lower border of the eighth rib was a something which resisted pressure. Pressure in the lumbar region, under the last rib, pushed this tumour forward, upward, and downward. When the child was chloroformed, the tumour was seen to consist of two parts, and was recognised as the right kidney, much enlarged and freely movable. The left kidney was in its proper place and fixed. Hirschsprung, in commenting on these cases, thinks that a demonstrable swelling beneath the border of the rib, especially on the right side, of the consistence and shape of the kidney, which can easily be pushed upward toward the normal position of the kidney, and is freely movable forward and backward between the hands, cannot be mistaken for anything else. Both of his cases, as well as the three cases of Steiner, occurred on the right side. Three of the five cases were in boys. In none of the five was there any demonstrable cause. Hirschsprung refers to the paroxysmal pain, which comes on without any exciting cause, lasts a variable time, and then slowly subsides. His second case was complicated with ileus.—*N. Y. Med. Jour.*

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

New Therapeutical Preparations and Appliances.

THROUGH the courtesy of Messrs. S. M. Burroughs & Co., of No. 8, Snow-hill, Holborn Viaduct, London, we have been presented with a number of therapeutical preparations and appliances recently introduced by Messrs. Wyeth, of Philadelphia, and other well-known pharmaceutical chemists.

Wyeth's Compressed Tablets are daily winning their way into favour. The compressed powder or tablet, owing to its somewhat flattened or lenticular shape, is much more easily swallowed than any other form of pill, and has the further advantage of containing the several drugs in a highly concentrated, active, and convenient form. Among the tablets submitted we find those of ammonium chloride (each tablet containing three grains), chlorate of potassium (five grains each), potassium bicarbonate (five grains each), sodium bicarbonate (five grains each), and peptonic tablets (three grains each), composed of pure concentrated pepsin and pancreatin, with lactophosphate of lime and lactic acid.

The dialysed iron is now well known and extensively used. It is described as a neutral solution of oxide of iron in the colloid form, the result of endosmosis and diffusion with distilled water. The advantages claimed for this preparation are:—1. It is easily administered, the dose

being very small ; 2. It has no unpleasant taste or smell ; 3. It does not irritate the stomach ; 4. It has no effect on the bowels, producing neither constipation nor diarrhœa ; 5. It does not blacken the teeth. Professor Tichborne reports that his analysis of Wyeth's preparations gave—

Ferric oxide (in the soluble form)	-	-	6.228
Chlorine	-	-	.100
Water	-	-	98.672
<hr/>			
Total	-	-	100.000

He observes :—" We may say, therefore, that it contains in the fluid ounce, 27.68 grains of a basic salt of iron, which, strange to say, almost exactly agrees in composition with the results obtained by Professor Th. Graham. In his experiments he obtained a red liquid containing 98.5 parts of oxide, and 1.5 of muriatic acid. The salt contained in Wyeth's preparation, contains 98.42 ferric oxide, and 1.58 of chlorine. We have found Wyeth's dialysed iron, to be a pure and concentrated solution, which has been well prepared."

Besides the foregoing preparations by Wyeth, Messrs. Burroughs have submitted samples of Fellows' "Compound Syrup of Hypophosphites," composed of hypophosphites of iron, quinine, and strychnia, manganese, lime, and potash. Each medium adult dose (one fluid drachm) of this syrup contains a proportion of hypophosphite of strychnia equal to one-sixty-fourth of a grain of pure strychnia.

Two very elegant preparations introduced by Mr. Alfred Bishop, of Mile End, New Town, London, are the granular effervescent extract of nux vomica and the granular effervescent citrate of caffein. One drachm of the former contains one-twelfth of a grain of extract of nux vomica. The citrate of caffein is a pleasant remedy in sick headache, and is also—according to a recent paper in *The Practitioner* (published anonymously in the number of that journal for April, 1880)—a diuretic of no little value in cardiac dropsy. There is one grain of the citrate in each drachm, which is the average dose.

All the preparations just described illustrate the advances which are being made in practical pharmacy at the present time. Elegant and precise forms are quickly taking the place of those older and more clumsy ones which in some instances still disfigure the pages of our national Pharmacopœia ; and we cannot but hope that the day is not far distant when many of the formulæ introduced by Savory and Moore, Kirby, Wyeth, Bishop, and other pharmacists of high reputation, will receive official sanction, and establish that era of scientific therapeutics on the threshold of which we appear to stand.

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JUNE 1, 1880.

PART I.
ORIGINAL COMMUNICATIONS.

ART. XXII.—*A Case of Gangrenous Inflammation following Vaccination ; or, "Vaccinia Gangrænosa."*^a By **WILLIAM STOKES, F.R.C.S.** ; Surgeon to Richmond Surgical Hospital.

THERE is, as Hebra and other dermatologists have pointed out, a remarkable similarity between the irregular or modified forms of vaccinia and those of variola. In the latter, as Hebra observes, "we have to deal with local and with general modifications of the normal course, and in it, as in the case of vaccinia, the local appearances consist—sometimes in an anomalous development of the pustules, sometimes in the presence of some other affection—such as erysipelas or gangrene." It does not, however, appear that Hebra has seen vaccinia connected or associated with gangrene, but an instance of it is noted in the work I have just quoted from, and this is taken from a treatise by Bednar, entitled "*Die Krankheiten der Neugeborenen*," published in Vienna in 1853. The patient was a weakly infant, thirty-three days old. Gangrene set in on the twenty-fifth day after vaccination ; at the same time diarrhoea, bed-sores, and other troubles supervened, under which the child succumbed.

In Willan's work on "*Vaccine Inoculation*," which Dr. Frazer kindly lent me for reference, no case of gangrene following vaccination

^a Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, May 5, 1880. [For the discussion on this paper, see page 528.]

is given, but he mentions cases in which he observes:—"The inoculation excites a new mode of action, terminating in erysipelas, phagedenic ulcer, or other morbid appearances not necessarily connected with the specific disease. Several of these anomalies or exceptions to the general rule have occurred, but certainly not so often as was expected by those who considered the subject from the first dispassionately, nor have they been in sufficient number to form any serious objection to the practice founded on Dr. Jenner's discovery."

Recently a very remarkable case occurred in the practice of Mr. Jonathan Hutchinson. The case excited a considerable degree of interest, and was exhibited and discussed at the Pathological Society of London. It appeared to Mr. Hutchinson to establish a distinct connexion between vaccinia and gangrene, and led him to propose the name of "vaccinia gangrænosa." In February last a case presenting many features of analogy with that of Mr. Hutchinson was under observation in the Richmond Hospital, and at the time made me, I confess, feel assured of the connexion between the two conditions. Having regard to the existing prejudice—happily not by any means a widespread one—against vaccination, the question is one of very great public importance, for, if the connexion between the two affections be established, undoubtedly a signal impulse will be given to the anti-vaccination movement, and I need not dwell on the consequences—the disastrous consequences—of such a result.

Before coming to any conclusion in reference to the alleged connexion between the two conditions, we may consider briefly the leading particulars of these remarkable and rare cases. The following is a brief note of Mr. Hutchinson's case, taken mainly from the report of it which appeared in *The British Medical Journal* for December 13, 1879:—"The child from whose arm the vaccine lymph was taken was apparently healthy, and three other children vaccinated with the same lymph showed no unusual symptoms. The other children of the same family were all healthy. On the eighth day the vaccinated spots had risen as usual, but the child's body presented an eruption which the medical man, under whose care it was, believed to be variola. Three days later the vesicles of the eruption were surrounded by large red areolæ, which developed into gangrenous patches. The child was found dead one morning three weeks after vaccination. The gangrenous spots were not quite symmetrical, but were more copious and showed greater symmetry

on the back than on the front of the body. The most advanced patches showed abrupt eschars; there was nothing like rupia. The head was less affected than the trunk. The vaccination scars showed the normal condition." At the inquest it was suggested that the condition was due to syphilis, but Mr. Hutchinson saw no reason for believing this to be the case. He suggested that it was a case of the eruption which sometimes follows vaccination, passing into gangrene. In a letter to our House Surgeon at Richmond Hospital, Mr. Lentaigue, who wrote to Mr. Hutchinson on this subject, he observes:—"I believe my case to have been the first observed, or, at any rate, so named. I have long been familiar with what I have called 'varicella gangrænosa,' which corresponds with the vaccinia gangrænosa. I do not think, however, that the varicella form has been described." This admirable drawing [exhibited] represents the appearance of the gangrenous eruption, and I am indebted to Mr. Hutchinson's courtesy for having an opportunity of exhibiting it here this evening.

The following are the notes of the case that has lately been under observation in my wards in the Richmond Hospital, for which I am indebted to Mr. Lentaigue:—

CASE.—M. E. M'M., previous to her recent illness a healthy, strong, well-nourished child, at nine months, was admitted into the Richmond Surgical Hospital under my care on February 17, 1880. Her mother gave the following account of her case:—She stated that on Saturday, the 7th February, the child was brought to a neighbouring dispensary in order to be vaccinated, and that the operation was performed. The child was then apparently in perfect health, and did not seem to suffer in any way from the vaccination, except that the arm looked somewhat red and swollen immediately after. These signs, however, subsided towards evening. Next morning (Sunday) the child was feverish, and towards evening seemed to be very ill and refused to take any nourishment whatever. On Monday morning, within forty-eight hours after the vaccination, a number of purple and black spots appeared—first on the buttocks, next on the face, and subsequently all over the body. These were not raised, and were about the size of a sixpenny-piece, except on the buttocks and calves of the legs, where they were much larger and quite irregular in form. The eyelids were swollen and closed. The child was now brought to the Mater Misericordiæ Hospital, where it was seen by Dr. Coppinger, who has kindly mentioned the following circumstances in connexion with the case:—"The child was covered with a petechial eruption of a purple black colour; there were large bullæ over the buttocks; the conjunctivæ were injected and the eyelids

swollen. The mother's account to him was that the child had been poisoned by vaccination two days before. The vaccination marks were clearly seen on the arm." The mother refused to leave the child in hospital, and brought it home. Later on a number of large vesicles appeared over many of the spots, and disappeared shortly after. They were usually broken by the rubbing of the clothes. The child seemed to get steadily worse in condition, and the mother then brought it to the Richmond Hospital, where it was placed under my care. On admission the child presented the following appearance:—The body and face were sparsely covered with spots, each of these covered with a yellow scab, and exactly resembling the crusts to be seen in a mild case of variola that is convalescing. There were large sloughing surfaces on both buttocks, on the back of the right thigh, on the calf of one leg, and on both arms. The largest of these was on the right buttock and back of right thigh; it was eight inches long and two and a half inches wide at the widest part. In the middle of it was a large black slough separating; it was dry and looked like leather. The slough implicated not only the whole skin, but also the subjacent tissues. The other sloughs were smaller, and those on the calf of the leg and on arms had not yet commenced to separate. There was no inflammation round these latter. There were three distinct well-marked vaccination vesicles on the left arm, one of which had been ruptured. They presented the appearances usually seen on the ninth or tenth day. They were healthy-looking, but there were large sloughs in their immediate proximity. As regards the treatment adopted in the case, there is little that is noteworthy. The best nourishment suitable to an infant was given. When the sloughs separated—which they were encouraged to do by assiduous poulticing—the granulated surfaces were dressed with mildly stimulating antiseptic applications—such as carbolic oil, benzoin and glycerine, and weak chloride of lime lotion. Under the influence of these the raw surfaces healed rapidly. About a week after the child's admission into hospital she suffered from a severe attack of diarrhoea, which so reduced her that I feared at one time it would end fatally. For this she was treated mainly by aromatic chalk, and also grated, raw lean beef made into a thin paste with port wine and sugar. This treatment proved effectual, and eventually the child got quite well and returned home.

I think that, on reference to these drawings, there can be little doubt that there are many points of resemblance in the phenomena observed in them with the disease, an account of which was given by the late Dr. Whitley Stokes in the "Dublin Medical and Physical Essays," in June, 1807, and to which the name of *pemphigus gangrænosus* was given, and to which also the popular names of "the eating hive" and "the burnt holes" have been also given. I

may state that this disease is looked upon by Mr. Hutchinson as a form of varicella—that, namely, to which he has given the term of “varicella gangrænosa.”

As regards the question of diagnosis of “vaccinia gangrænosa,” and the suitability or fitness of the term, certain difficulties have, on a closer consideration of these cases, presented themselves to me. In the first place, in Mr. Hutchinson’s case it is stated that “three other children were vaccinated with the same lymph,” yet none of these three became affected with the gangrenous disease; and a very similar statement was made by the mother of the child that was under my care in the Richmond Hospital. It appears to me, therefore, if the poison that produced the gangrene was in the lymph, the probabilities are that some of the other children would have become affected too. This, however, did not occur.

Then, again, the great rapidity with which the pemphigoid rash manifested itself after the vaccination—in my case, at all events—raises in my mind a grave doubt as to the connexion between the vaccination and the appearance of the eruption. The period of incubation, one would certainly expect, would be longer than forty-eight hours. Against this, however, may be stated the possibility of the mother’s account being inaccurate. Assuming, however, that it was accurate, some may possibly think it not inconceivable (though the probabilities are opposed to it) that the agency that produced the eruption in this case does not require as long a period of incubation as in varicella and other exanthematous affections—the period in all being a varying one. It is right to mention that the gentleman she named as having vaccinated her child denies having performed the operation, and expressed a readiness to produce his books to show that on the day the mother mentioned no child of the patient’s name was vaccinated at his dispensary. One thing, however, is certain, and that is, that the child had been vaccinated a very few days previous to its admission into hospital; and the mother, for some reason only known to herself, may have wilfully endeavoured to mislead, as regards the time of the operation, both Dr. Coppinger at the Mater Misericordiæ Hospital, and Mr. Lentaigne and myself subsequently at the Richmond. The third difficulty is the fact that the vaccine vesicles themselves did not, either primarily or secondarily, in either Mr. Hutchinson’s case or mine, participate in the gangrenous action. In my case the gangrene first appeared on the left buttock, subsequently on the left arm, near, but not on the vaccine vesicles. This latter circumstance it is that makes Mr.

Ceely, of Aylesbury, doubt the propriety and regret the introduction of the term "vaccinia gangrænosa." In an interesting letter I have recently received from him he observes:—"I have seen and Dr. Gregory has described vaccinia attended with purpura. I have seen vaccinia attended with convulsions, and have drawings of two forms of vesicular eruption often occurring at a late stage of vaccination. But these occur at the acme, in the incipient decline of the areola. They are truly vaccine vesiculations. They occur in the cow, in children, and in dogs, when vaccinated. They have been denominated by the Germans 'Nachpocken.' These vesicles and bullæ are seen in children more frequently than supposed by vaccinators, who lose sight of their patients after the eighth day. . . . Please believe and understand me that I shall be sorry to see the term vaccinia gangrænosa introduced."

These cases are, I think, of much interest and importance, not only on account of their rarity, but also because they enable us to consider the important question as to whether the co-existence in them of vaccinia and gangrene was merely accidental, in which case the term "vaccinia gangrænosa" would be a misnomer, or whether the two conditions existed in the relation of cause and effect. If they did, then we must admit the propriety of the term. I should be sorry to offer any decided opinion on the point; but I cannot but think, notwithstanding what has been said and published to the contrary by a pathologist and surgeon of such conspicuous ability and powers of accurate observation as Mr. J. Hutchinson, that the weight of evidence is opposed to the view that there is a connexion between the two conditions.

ART. XXIII — *On a New Method of Treatment of Relaxation of the Membrana Tympani.*^a By WILLIAM A. M'KEOWN, M.D.; Surgeon to the Ulster Eye, Ear, and Throat Hospital, Belfast.

I HAVE pleasure in bringing before you the results of a somewhat large experience of a new method of treatment of relaxation of the membrana tympani, which I have already submitted to the notice of the profession at the meeting of the British Medical Association at Cork in August last. I am happy to say that my faith in it has not waned, that from my first application of it till the present time I have used it almost daily, and that I have the firm conviction it

^a Read before the Ulster Medical Society, Tuesday, March 2, 1880.

will take its place as one of the most important aids in the treatment of diseases of the ear.

When a claim is advanced for the introduction of a new method and a new principle in the treatment of disease, it is desirable to review the present state of knowledge. On examination of the works of the most eminent authorities in aural science we shall find that—

No method of Treatment of any value has been proposed or practised for Relaxed Membrane.—Sir William Wilde, in his classical work on “Aural Surgery,” writes:—“This is a cause of deafness most difficult to treat, but unless some other disease coexist with it we may generally assure the patient that his deafness will not increase. When once the membrane has been pressed for any length of time inwards it is very difficult to restore its position permanently. Many persons inflate the drum by holding the nose and making a forced expiration whenever they wish to hear what is said. In others we can temporarily restore the position by Eustachian catheterism, but in both the membrane returns to its former condition in a short time. I have tried the effect of exhausting the air in the external meatus by means of a syringe accurately adjusted to the outer aperture, but I have not effected any good thereby. On the contrary, I think the congestion produced by the exhaustion is rather detrimental to the organ. I have frequently afforded temporary relief by dropping with a glass tube a little nitrous ether into the meatus, and immediately stopping the external aperture either with the finger or by pressing the tragus over it. Some slight pain is instantaneously felt, followed by a boiling sensation, then a glow of heat, and a feeling, to use the patient's expression, as ‘if the drum of the ear was sucked out.’ It is difficult to understand how this remedy acts and assists to restore the membrane to its normal position.”

Hinton, in his work on the “Questions of Aural Surgery,” says:—“In milder degrees of indrawing of the membrane, when, though it can be restored to its place by inflation, and temporary improvement follows, it soon falls back again, Politzer introduced and still speaks highly of the plan of keeping up an air-tight closure of the meatus. Having well inflated the tympanum, he takes some cotton wool rolled up into a small ball with wax or ointment, and with it closes the orifice of the meatus. He thus takes off the pressure of the external air, and even turns to account the absorption of air in the meatus, making it tend to

draw the membrane outwards, care being always taken to see that the Eustachian tube is free. The ball may be worn for several consecutive nights, and then omitted for the time. When the membrane is atrophied, however, this plan does not succeed. But then excision of the relaxed part, whether it be a scar or a part otherwise thinned, will sometimes be of use; or if the relaxation has advanced only to a less degree, and the membrane simply lacks the proper tension, simple incisions into the most relaxed part of the membrane help towards a restoration of the normal tension, apparently through the contraction that attends their healing. The incisions may be frequently repeated, and at short intervals; but in this climate, and with the kind of patients we usually see, I should prefer always to let fourteen days elapse." It will be observed how unsatisfactory is the testimony of this conscientious observer regarding the treatment he proposes. It looks as if he thought these means should be useful rather than that they were. He says nothing of his personal experience of Politzer's method. To cut out a piece of the membrane is not an operation easy of execution nor altogether safe, and simple incision is, in my opinion, very unlikely to increase the tension. Certainly he has not advocated these operative measures in such a way as to lead to their adoption, and we have no data on which to form an independent judgment.

Toynbee deals with the subject, and gives details of cases in which he treated intercurrent inflammatory attacks with success, but we have not a suggestion regarding the treatment of the condition of relaxation.

I need not further quote from authorities. I may briefly state that the works of Von Troeltsch, St. John Roosa, Turnbull, Dalby, Field, and Macnaughton Jones, either pass over the subject altogether or fail to make any valuable suggestion for treatment.

Importance of the proper tension of the Membrane.—There can, I think, be no question that the membrane has at least two functions—viz., to receive vibrations for conveyance through the ossicles to the labyrinth, and to support the handle of the malleus. If the membrane in whole or in part have lost its proper tension, it is, I think, evident that the vibrations will not be conveyed with due regularity, that different vibrations succeeding each other may be confounded, and that a dulness of hearing may result from the confusion necessarily resulting. Further, if the membrane at parts be depressed so as to touch structures within the tympanic cavity,

the force of the vibrations may be diverted from its proper channel. It is likewise evident that one part of the membrane may be depressed without materially interfering with the support of the handle. If the membrane be of proper tension in two or three different radial directions, the handle may be well supported, and the hearing consequently will not suffer from this cause. If, on the contrary, the whole of the anterior or posterior segment should be defective in tension, then the handle can have no longer proper support, and is likely in time to assume a faulty position, as a rule, in a direction opposite to that in which the tension is defective. When the whole membrane lacks proper tension, then the handle usually inclines inwards too much, and brings about intra-labyrinthine pressure and nervous disturbance. In some instances the handle as well as the membrane has far too great a range of motion both inwards and outwards—this being no doubt caused by insufflation and forced expiration.

Having now a notion of the functions of the membrane, we may examine with advantage—

The Clinical Characters of Relaxation of the Membrane.—I do not deem it necessary to enter upon a discussion of various diseases which may lead to this diseased condition, but shall simply observe that relaxation is usually brought about either by inflammatory processes in the membrane itself, leading to a loss of resisting power, or by long-continued pressure of the atmosphere on a drum-head exhausted during the course of Eustachian disease. Let us suppose, however, that the original cause has disappeared, and that we have simply to remedy results. The clinical characters are very characteristic, and somewhat varied. As you would expect from the unsteady condition of the membrane, the hearing power varies quickly and remarkably. At one minute the hearing of the patient may be average, at the next quite dull. The fact is, it could scarcely be otherwise, considering that in many cases the membrane flaps in and out in a most irregular manner on every act of swallowing—indeed almost with every change of position of the head. The patient usually has either been taught, or has found out, that distension of the tympanum by forced expiration—the nose and mouth being closed—improves the hearing for the time, and he therefore resorts to this very frequently for the sake of the temporary improvement induced, but so soon as the membrane collapses he is as bad as before. Various unpleasant subjective sensations find a ready explanation from the condition of the

membrane. For example, the feeling as if the ears were plugged with wax, or some foreign substance is caused by the inward pressure of the collapsed membrane on the ossicles. The confusion of voices, of which many complain, arises, in all probability, from the vibrations not being quickly conveyed and terminated, because of the want of tension of the membrane. The sensations of opening and closing, or of something falling in the ear, are very frequently experienced by the patients, and are clearly produced by an actual physical cause—viz., the movements of the membrane. Some extraordinary noises, of which patients with this disease sometimes complain, may be located in the membrane and cavity of the tympanum, and entirely removed from the objectionable category of nervous disease. It does not require a great stretch of imagination to conceive how rattling, thundering, creaking noises arise from movements of the membrane and ossicles. A patient under my care at present says that he had a feeling as if something were knocking about in his ear when he breathed deeply, blew his nose, or shook his head. Clearly the cause was in the middle ear, and, I have little doubt, was caused by a relaxed membrane, with probably some loosening of the connexions of the ossicula. This view is borne out by the fact that the symptom disappeared on the restoration of proper tension to the membrane.

On inspection of the membrane we find the greatest variety in the appearances. Sometimes the membrane retains its normal transparency; sometimes it is opaque or somewhat thickened, in whole or in part; the membrane may be relaxed, in whole or in part; the depressed part may gradually slope into neighbouring parts, or may be separated from them by a well-defined margin. In some cases the depressed part is involuted, as it were, so as to be in part hidden beneath the surrounding membrane; or may be so pressed down upon the ossicles that the latter are clothed with the membrane.

To complete the examination of the condition of the membrane, it is necessary to inflate the drum by one of the usual methods. In this way we may determine whether the case is one simply of relaxed membrane, or of relaxed membrane complicated with adhesions. If forcible expiration causes all the depressed parts to bulge, then it is clear the membrane is not adherent; but if by this method no change, or only slight change, is induced, then it will be necessary to use Politzer's method. I have several times remarked that forcible expiration only partially elevated a

depressed membrane, and that Politzer's method completed the elevation.

It is especially important to note the relation of the handle of the malleus—viz., whether it is inclined too much inwards or outwards, backwards or forwards; whether it stands out prominently, with membrane depressed before and behind, or has given way entirely to the in-pushing membrane. In the majority of cases deviation in one or other direction will be found.

Prognosis hitherto.—At the best, as Sir William Wilde has remarked, the condition may remain stationary, but too frequently matters take an unfavourable course. The unsteady condition of the membrane, and the consequent varying degree of in-pushing, are sources of irritation, lead to vascular and nervous disturbance, and often bring about intercurrent congestive attacks. Besides, a non-adherent relaxed membrane may become adherent, and then the case becomes greatly aggravated. The very treatment recommended by some aurists—and frequently practised by patients to secure temporary relief—only tends to augment the loss of tension; I mean Valsalva and Politzer's methods of inflation. Distensile force frequently applied to a structure already deficient in resistance will generally still further diminish its power of resistance. But insufflation, though clearly injurious in the long run, may be required to prevent the immediate occurrence of a greater evil—viz., adhesions during an inflammatory attack. As regards distension of the tympanum, we may say that its practice may do harm, and that its omission may do still greater.

To restore Lost Tension is the Rational Treatment of Relaxed Membrane.—I trust I have now brought you with me to the point of concluding that to restore tension should be our great aim in the treatment of relaxed membrane. That this can be done now with great ease and safety admits of no doubt. At the meeting of the British Medical Association referred to, I showed that contractile collodion applied on the membrane of the tympanum adhered firmly, contracted the membrane to a greater or less extent, whilst it remained adherent, and also exerted a permanently beneficial influence on the relaxation. I am happy now to report that my anticipations regarding the permanent restoration of tension—that is to say, the cure of the condition of relaxation—have been realised.

History of the first case cured by the application of Collodion.—The patient was an unmarried woman, aged forty-one. She had been under my care

from time to time for three years on account of catarrh of the drum and its results, and treated by me according to recognised methods. With the left ear she heard my voice (moderate tone) at a distance of three feet, but the hearing varied much. The noises in her ears were of the most distressing kind. At times the noise was like that of a thunder-storm, again like that of machinery, and sometimes like the blowing of a horn. The sounds of other persons' voices were greatly confused ("entangled," as she put it). Her own voice seemed to her to have a most unnatural tone. She formerly sang in church, but since she became deaf her own voice seemed to her so inharmonious that she was obliged to cease singing. At times she was quite bewildered, and she told me that she believed her noises would have put her mad, had she not been obliged to earn her bread. On examination of the membrane, I found a number of depressions between the upper part of the handle of the malleus and the posterior wall of the meatus. All these depressions became bulgings on inflation of the drum by Valsalva's method. I applied collodion freely. Her hearing was immediately improved, and continued steady. She came to hear my voice (moderate tone) at the distance of eighteen feet, and the noises in the ear ceased. The confusion of voices, and the unnatural character of her own voice, disappeared. She became able to sing as she had formerly done. The depressed part became quite flat. On July 29th (that is, about three months after the application) I thought the layer of collodion loose. I syringed, and found that the loosening was only partial, and that the layer did not come away at all readily. The hearing remained good and the depression had disappeared, probably owing to the long-continued bracing up. The membrane seemed too lax, however, and I put on another coat two days afterwards.

At present the hearing is stationary, the relaxed part has its normal tension, there is not the slightest depression at any part, the membrane has become perhaps more than usually transparent, and the patient has not had a single unpleasant noise since my first application. Two applications have sufficed to bring about a permanent cure of the relaxation. No other treatment of any kind has been adopted.

Critical examination of the history of the above case.—But it may be asked was the improvement really owing to the contractile influence of collodion or to some other cause, or to several causes combined? Was the good result a mere coincidence? We know that deaf patients are usually influenced beneficially by a very dry atmosphere, injuriously by a damp one—beneficially by heat, injuriously by cold. The patency of the Eustachian tube improves the hearing, and obstruction diminishes it. Now, I desire to exclude from this case every source of error, and to show that we must

conclude that the increased tension induced by collodion was the only cause of the improvement. The facts, then, which stand out prominently are—

1st.—That for three years the patient had been subjected to varied treatment by myself, without satisfactory results.

2nd.—That the application of collodion was followed by immediate improvement.

3rd.—That no other treatment was resorted to, either simultaneously with, or subsequently to, the local application of collodion.

4th.—That it is unreasonable to suppose that any chance circumstance of a general character had any influence, as she has been since exposed to varied temperatures, and has continued her ordinary mode of life, but still the improvement has continued throughout.

5th. That only two changes were induced by the collodion, viz.—slight increase of thickness and increase of tension, with steadying of the ossicles. We may dismiss the increase of thickness as the cause of the improvement—indeed, it could easily be excluded by experiment. There only remains, therefore, the increase of tension.

6th. That the permanent cure of the relaxation was owing to the action of the collodion, there being no other cause in operation. Besides, the previous experience of the profession pointed to the permanency of the condition when once established, and this departure from the previous invariable rule was, no doubt, owing to the agent now used for the first time.

This now brings me to the enunciation of what I may call a general law, viz.:—

That the structures of a living body, no matter how resistant they may be, expand or contract, as the case may be, under the influence of purely mechanical forces, and may continue in the new condition of expansion or contraction permanently—in other words, the structures of the body accommodate themselves to new conditions most readily. We are all quite familiar with numerous apt illustrations—as, for example, the lengthening of the ligaments and fibrous structures on distension of joints; the enormous distension of the hydrocephalic head; the increase of the capacity of the fibrous capsules of various organs; the increase in the area of the cornea and sclerotic under increased intra-ocular pressure, and the diminution under diminished intra-ocular pressure; the permanent shortening of ligaments, muscles, and tendons, in prolonged flexion of the limbs; the diminution in area of the capsules of organs on atrophy of the structures of the organ. Likewise, as the membrana

tympani permanently increases in area or relaxes under the atmospheric pressure, so it shortens permanently under the long-continued contraction of collodion.

I have, perhaps, in the opinion of some, entered upon this subject too fully. I do not think so, however. I have endeavoured to avoid a mistake too common in medicine and surgery—of hastily concluding that a certain effect was owing to a particular cause, when it might be really owing to another cause or combination of causes. I am the more particular in dealing with this question in a strictly logical way, as I desire that a method of treatment which has been so successful in my hands should be adopted by my professional brethren, not simply on my representations, but because it is rational.

ART. XXIV.—*On Urobilin and its production from Bilirubin and Biliverdin.* By C. A. MACMUNN, B.A., M.D., Univ. Dubl.; Wolverhampton.

ACCORDING to M'Kendrick's Physiology,^a urobilin and indican are the principal urinary pigments. I have shown elsewhere^b that urobilin is constantly present in healthy human urine, and so far as the researches which I am about to describe have gone, I have no reason to change this opinion. Urobilin is, therefore, a pigment of very great importance to the physician, and the study of its chemical and optical characters, and of its parentage, if I may be allowed to use this term, will help us to form more accurate ideas as to the value which its absence from, or its increase in, urine may possess. Moreover, as I shall endeavour to explain, the urobilin of health differs from urobilin excreted in some diseases in certain particulars, the reason of which, I think, can be explained.

Method of obtaining Urobilin from Urine.—In a paper read before the Royal Society,^c I have described a method for the separation of urobilin from urine, which was arrived at after many unsuccessful attempts had been made to isolate urobilin by other methods. The urine is precipitated with neutral and basic acetate of lead, and filtered—the precipitate in the filter is washed with water; it is then extracted with alcohol acidulated with sulphuric or hydro-

^a Outlines of Physiology. 1878.

^b Spectroscope in Medicine. 1880.

^c Proceedings Royal Society, No. 202. 1880.

chloric acid, and again filtered. The filtrate, in small quantities at a time, is put into a separating funnel, a large quantity of water added, and then pure chloroform; the whole is repeatedly shaken, and then allowed to stand. The red chloroform layer is separated off and filtered, the chloroform driven off, and the residue repeatedly dissolved in chloroform, or preferably in absolute alcohol; finally, on evaporation we obtain a brown-red, amorphous, shiny residue, which is perfectly soluble in alcohol, chloroform, certain acids, and acidulated water, partially soluble in ether, in water, and in benzol, but quite insoluble in bisulphide of carbon. Urobilin is found, when thus prepared, to contain carbon, hydrogen, oxygen, and nitrogen.

Its various solutions all show a black band at F. This band can be made to disappear by adding to these solutions ammonia in excess, and is replaced by another band nearer the red end of the spectrum on the addition of caustic soda or caustic potash—in fact, the solutions of urobilin thus obtained behave, as regards their spectra, in the same manner as urine itself which contains enough urobilin to allow of thin layers of it to be examined satisfactorily by means of the spectroscope.

If a solution of urobilin be first treated with caustic soda, and then with ammonia, the band nearer the red produced by the caustic soda will not disappear.

The pigment itself gets redder when exposed to the air. I have not examined its solutions for fluorescence* on the addition of chloride of zinc, but the characters given above are quite sufficient to enable the pigment to be diagnosed from others giving a band in the same part of the spectrum. The urobilin which I obtained from the urine of a case of phthisis, in which large portions of the lungs had been destroyed, presented in deep layers of its chloroformic and alcoholic solutions a feeble band on each side of D, in addition to the band at F. It was suggested to me by a well-known physiological chemist that these two bands indicated an impurity in the pigment obtained—indeed he suggested that, by the adoption of my method, “omicholine” had been separated—so I set to work to find out the cause of the appearance of these bands. The result was very interesting. I found not only that these bands were not due to the presence of an impurity, but that

* Hoppe-Seyler. Handb. d. Phy. und Path. Chem. Analy. 4th Edition. 1875. Urobilin contains, according to Maly, $C_{22}H_{40}N_4O_7$; *probably* it will be found nearer $C_{16}H_{16}N_2O_6$ or O_6 (f)

three bands—a feeble one on each side D, and a black one at F. *These bands were identical in position and in shading with those observed in the chloroformic solution of the urobilin of phthisis, and with those of the chloroformic solution of biliverdin treated with nitric acid.* Moreover, ammonia produced a band^a covering D, identical with one produced by the same reagent when it was added to a chloroformic solution of the phthisical urobilin. At the end of three weeks the colour of this fluid was brown-yellow, and it then gave only a band at F. By mere exposure to the air, then, the same series of changes which take place by the action of nitric acid on bile-pigment was produced in the spectrum; and further, the fluid no longer gave the colour reaction with nitric acid which is characteristic of Gmelin's test.

Action of Oxygen on Biliverdin.—A chloroformic solution of bilirubin was exposed to the air until it had changed to biliverdin; it was then evaporated over the water-bath, and the residue dissolved in water. The solution was sap-green in colour, *and gave no absorption bands.* A test-tube was half filled with this solution, and a stream of oxygen gas passed into it; the colour soon became darker, and coincidently a band appeared at F. On continuing the action of the oxygen the colour changed to a dirty green-blue, with reflected, but brown with transmitted, light; and three bands now appeared, one on each side of D, and one at F, which, allowing for the difference of refraction of the medium in which the pigment was dissolved, were found to be exactly the same bands which were seen in the solutions mentioned above. The colour then became purple, then a dirty lavender, with reflected light, and, lastly, yellow-brown, with transmitted light; and *at that stage only one band could be seen—viz., that at F.* Nitric acid, which brought out a beautiful play of colours with the original solution, now no longer affected it, so that the result coincided with the former ones.

Permanganate of potassium and peroxide of hydrogen were also added to solutions of biliverdin, and the result noted. I may here, however, content myself with stating that the former supported the other experiments, while the latter was almost inert in its action.

Action of Sodium Amalgam on Biliverdin.—An aqueous solution of biliverdin was treated with sodium amalgam, before the addition of which it gave no bands. At the end of two hours the fluid had changed to a pale green-yellow, and gave the same band that is found when solutions of urobilin are treated with caustic soda.

^a In thinner layers that at F had gone.

After longer action no further change took place. Treated with hydrochloric or acetic acid^a the fluid became reddish-brown, and now gave a black band at F, which was much more distinct after filtration.

An aqueous solution of biliverdin was now treated with caustic soda, and the result was exactly the same as with the sodium amalgam. I think I am correct, therefore, in assuming that the change which took place was due to the formation of caustic soda, and therefore to oxidation; for we know that caustic alkalies exert an oxidising action on organic bases, especially unstable ones. So far, then, as Maly's assertion, to which Hoppe-Seyler assents, is concerned—to the effect that sodium amalgam converts bilirubin into urobilin—I can support him; but I must say that my experiments all tend to show that the transformation is due to *oxidation*, not reduction. I have made many other experiments which all lead to the same conclusion, so that I think I may now lay down the following proposition:—

That urobilin can be formed from bilirubin and biliverdin by oxidation, and that in health this transformation takes place in the body, but that in certain diseases, when oxidation is impeded, the urobilin in the urine is found in a condition of incomplete oxidation.

All the bilirubin which gets into the blood is oxidised and excreted in the urine as urobilin, under normal conditions. If a portion entirely escapes oxidation, it may appear in the urine as bilirubin, or, if in larger quantities, it may produce jaundice. Thus we can understand how jaundice could be produced by destruction of the oxygen-carriers—the red blood-corpuscles; or by the presence in the blood of poisons, which prevent the exchange of oxygen between the blood and the tissues; or by breathing vitiated air or certain poisonous gases; or by diseases of the lungs—in fact, by anything which prevents oxidation, immediately or remotely. I will now attempt to explain more in detail how this theory accounts for certain facts which are still *sub judice*.

Applications to Medicine.—The urine of jaundice accompanied by fever generally fails to give a reaction with nitric acid. The reason of this is that the bilirubin, although in excess in the blood, has already, owing to the increased oxidation going on in the tissues, become changed into a further oxidation product, and appears as such in the urine, where it is present as the urobilin of fever, and

^a I object to the use of hydrochloric acid in this case, as it alone will convert bilirubin into urobilin.

will not undergo further change with nitric acid. Again, in fever unaccompanied by jaundice, we often find a great excess of urobilin. This is owing to the fact that the rapidity of the heart's action, and, consequently, increased circulation, hurries into the blood a larger amount of bilirubin than normally is present therein; but, owing to the increased oxidation which accompanies the febrile state, the pigment is quickly changed into urobilin, and is excreted in the urine as such.

I cannot believe that urobilin is entirely formed in the intestine, for if it were we ought to be able to obtain it from the liver, which I have failed to do, for it would be again carried into the liver by means of the circulation first discovered by Schiff;^a and, although Hammersten^b says that urobilin is present in human bile, I have always failed to find it there. Nor can one easily see how the intestine could possibly contain enough hydrogen in the nascent condition to convert bilirubin into urobilin, even allowing that the latter can be formed by reduction; to me it appears much more probable that (apart altogether from the urobilin produced by oxidation) the stercobilin of Vaulair and Masius is *formed by the action of the hydrochloric acid of the gastric juice on the bile-pigments in the intestine*, and that the greater part, if not all, of the urobilin (or stercobilin) thus formed passes out with the fæces; for hydrochloric acid brings about the same transformation with bilirubin that oxygen does. Moreover, it is not compatible with a knowledge of physiological chemistry to believe that a series of oxidations, beginning with the transformation of bilirubin into biliverdin, and down through all the pigments which Heynsius and Campbell^c have described, should suddenly stop short at urobilin, and that this pigment should prove an exception to the general rule and be formed by reduction.

If we now try, by means of the theory for which I contend, to explain the causation of some kinds of jaundice which are independent of any disease of the liver, and which are put down to suppression or perhaps called hæmatogenous, which is really only a term to cloak our ignorance, we find that it fits in very well with the symptoms and appearances observed in such cases. I may mention the jaundice due to pneumonia, some kinds of icterus neonatorum, jaundice from breathing vitiated air, probably the

^a Giorn. di Scienze Naturali ed Econ. Vol. IV., p. 9. Palermo, 1869.

^b Maly's Jahresb. u. d. Fortschritte d. Thierchemie f. 1878. Bd. VIII., p. 260.

^c Arch. f. d. ges. Phys. 1871. Bd. IV., p. 497.

jaundice of phosphorus poisoning (and the general fatty condition of various organs in these last cases is in keeping with deficiency of oxidation); that due to snake-bites (since Lauder Brunton has shown that the blood-corpuscles are altered in such cases, and probably rendered unfit for carrying oxygen); that produced by chloroform and chloral (Leyden), and probably the jaundice of certain specific fevers—in fact, in most cases of jaundice which are not due to obstruction, we find some interference with the normal oxidation whereby bilirubin is converted into urobilin.^a Again, experiments on dogs have shown that the injection of bile-salts into the blood has caused the appearance of bile-pigment in the urine; the reason of this is—according to the theory which I have adopted—that the blood-corpuscles being destroyed by the bile acids there is not enough oxygen supplied to convert the bilirubin into urobilin, and the former, therefore, appears in the urine, for the destructive action of bile acids on the blood-corpuscles is well known.

But it is unnecessary to give further instances of the application of the study of the spectra of bile-pigments,^b and the transformation which they undergo with reagents, to medicine, as such will present themselves to every thoughtful mind. I know that the right hypochondrium is the starting point for a good deal of unsound doctrine; but I have, I trust, appealed more to facts than fancy, and have not trusted too much to authority, knowing that “the mortallest enemy unto knowledge, and that which hath done the greatest execution upon truth, hath been a peremptory adhesion unto authority” (Sir T. Browne).

^a Jaffé believed that he had detected urobilin in blood, but Hoppe-Seyler thinks that he mistook xero-lutein for it. I hope soon to be able to bring forward evidence of the presence of bilirubin in this fluid. The amount of either is so small that it is almost impossible to detect them in the presence of so many complex substances.

^b The appearance of a band at F in the bile of various animals, after exposure to air, noticed by me, and recorded in the Spectroscope in Medicine, is explained by the oxidation theory. The bile of the mouse appears to owe its colour to a pigment which is closely related to, if not identical with, urobilin—in other words, to a pigment produced by oxidation from another bile-pigment.

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PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Pay Hospitals and Paying Wards throughout the World ; facts in Support of a Re-arrangement of the English System of Medical Relief. By HENRY C. BURDETT. London: J. & A. Churchill. 1879.

MR. BURDETT has done much to merit his well-earned fame as a promoter of sanitary reform and contributor to the literature of State Medicine. In the department of Public Medicine, which relates to hospitals and their economics, Mr. Burdett has not only merited the fame which he has earned, but may be fairly characterised as *the* highest authority upon the branch of the subject which is discussed in the work now before us.

Mr. Burdett's works on Cottage Hospitals and Home Hospitals are so well known to our readers that it is unnecessary to remind them of the author's frequently expressed views upon the general aspect of the questions treated of in this his latest work. In this book on "Pay Hospitals," Mr. Burdett has successfully brought together all the arguments in favour of providing pay hospitals, and pay wards in general or special hospitals. He points out how our great hospitals, while relieving the sick and promoting medical education, are encouraging improvidence, prostituting charity, and in many ways undermining the independence of the working classes in this country. Thus these great charities, which should be noble examples of the noblest of virtues, are in reality encouraging, to no small extent, mean and petty vices.

Mr. Burdett, in a thoroughly logical manner, points out the original objects for which hospitals were founded—how they have come to be abused, and how they are to be reformed.

A great deal has recently been written in political journals about the relations between England and Russia, but we learn for the first time from Mr. Burdett of their economic relation in the particular of hospitals—namely, that in England and Russia alone among the nations of Europe we find pay hospitals absent as

national institutions. In France, Switzerland, Germany, Austria, Spain, Italy, Norway, and Sweden, pay hospitals are recognised as public institutions, supported or encouraged by the Imperial or Local Governing bodies. In the United States and British Colonies they are also found as established institutions, but in England and Russia they only exist through private efforts. Mr. Burdett discusses the conditions of existence of paying hospitals and paying wards in the hospitals of all foreign lands, and proceeds to apply in detail the information he has arranged to the conditions at home. We are glad to find that the author gives our own city of Dublin the credit of being the most successful cultivator of the principle of paying hospitals, and of paying wards in general hospitals, so far as the United Kingdom is concerned. He describes the foundation of the first pay hospital in London by Dr. Southwood Smith, and discusses the causes of its failure, and naturally points, with justifiable pride, to the success which has attended the revival of the Home Hospital movement in London under his own auspices. We cannot discuss in detail the many interesting questions dealt with by Mr. Burdett, but nevertheless heartily sympathise with and admire his earnest endeavours to remove the stigma which rightly attaches to the great medical charities of the United Kingdom, in consequence of the promiscuous manner in which they afford medical relief to poor and well-to-do alike, regardless of the demoralising influences which attend them. Mr. Burdett's efforts to provide "Home Hospitals for the well-to-do" are not less admirable, and certainly not less practically beneficial to the public, than his endeavours to reform the abuses of British hospitals.

T. W. G.

WORKS ON DISEASES OF THE SKIN.

1. *Atlas of Skin Diseases.* By LOUIS A. DUHRING, M.D.
Philadelphia: Lippincott & Co. 1879. Parts IV., V., VI.

WE have nothing but unqualified praise for the continuation of this beautiful Atlas, and we strongly recommend it to the notice of those who desire to possess a series of life-like portraits of diseases of the skin. All the plates are excellent, but if we would single out one for special remark it would be the instructive picture in Part V. of parasitic sycosis, which should be compared with the drawing given in a previous part of non-parasitic sycosis. A

careful study of these plates along with the accompanying text will help to dissipate the confusion that prevails as to the use and definition of the term sycosis. A graphic representation is given in Part VI. of a condition of the skin of the scalp and face, which is named seborrhœa, but which would perhaps be more commonly recognised as a form of dry eczema.

2. *Archives of Dermatology*. Edited by DR. L. DUNCAN BULKLEY.
Philadelphia: 1878 and 1879.

THIS excellent periodical continues to be conducted with vigour and enterprise, and is indeed almost essential to all who cultivate the department which it represents. While many of the original papers are well worth perusal, we feel that the distinctive value of the journal lies in the comprehensive digest of cutaneous literature which accompanies each number, and which is carefully worked up by the collaborators engaged in the undertaking.

In the number for October, 1879, the account of the proceedings of the subsection of dermatology at the Cork meeting of the British Medical Association is reprinted in full from *The British Medical Journal*.

3. *The Pharmacopœia of the British Hospital for Diseases of the Skin*. Edited by BALMANNO SQUIRE, M.B. London: J. & A. Churchill. Second Edition. 1880. Pp. 92.

MR. SQUIRE'S collection of formulæ offers no novelty, and many of the prescriptions are open to criticism, both from a pharmaceutic and medical point of view.

4. *Photographic Illustrations of Skin Diseases*. By G. H. Fox, M.D. New York: E. B. Treat. Parts I.-IV.

THESE illustrations are reproduced from photographic negatives by a new process, and, it is said, will not fade through age or exposure to light. The plates are carefully coloured by hand by Dr. Gaertner, who formerly studied under Hebra, and, so far as photographs can go, most of them are life-like and characteristic representations of disease. Those of comedo; favus, and eczema universale are very graphic, while in others—e.g., ichthyosis—the details do not come out sufficiently sharply without the aid of a lens of low power. The work will be completed in twelve monthly parts, each part consisting of four plates with accompanying letter-press; and we cordially wish Dr. Fox success in his enterprise.

PAMPHLETS ON DISEASES OF THE SKIN.

OUR American friends are busy writers, and if we may judge from the number of papers upon cutaneous subjects which shower unceasingly upon us, it would seem that dermatology has secured for itself a large share of attention among our Transatlantic brethren. We can do little more than enumerate some of the reprints which have reached us.

(1.) The American Dermatological Association held their second meeting at Saratoga in August, 1878, and at this meeting the Committee on Classification and Nomenclature reported in favour of adopting Hebra's system of classification, slightly simplified and modified.

(2.) Dr. Piffard, as the result of his experience of the different methods of treatment of lupus, concludes that "when excision is impracticable, scraping followed by the actual cautery is the least painful of the radical operations that have been proposed, and cicatrisation is most rapid. The resulting cicatrix is smooth and less disfiguring than that which follows spontaneous involution or the potential caustics. If a relapse of the lesion occurs it may be expected within three months at latest, and if this period passes without return of the disease *in situ*, the only fear is its development elsewhere."

(3.) Dr. L. A. Duhring describes at great length a rare form of new growth in the skin, mostly in the form of circumscribed tumours of a reddish colour, and which he provisionally designates "A Case of Inflammatory Fungoid Neoplasm." The text is accompanied by a lithograph showing the growths on the head and face of the patient, and by drawings of the histological appearances. Reference is made to two apparently similar cases described by Hebra a few years ago.

(4.) Dr. Shoemaker treats acne rosacea locally by puncturing the patches with a fine needle-knife twice a week, and sponging with warm water so as to allow free hæmorrhage. Subsequently zinc ointment is applied, and a mild astringent lotion of acetate of zinc.

The Medical Register, 1880. London: Spottiswoode & Co. 1880.
8vo. Pp. 812.

THROUGH the courtesy of Mr. W. J. C. Miller, B.A., Registrar of the General Medical Council, we have been favoured with a copy of this work. Like most other modern annual directories, "The

Medical Register" is increasing in size year by year. This seems strange, as the total number of names in the published "Medical Register" for 1880 is only 22,516, compared with 22,841 in 1878, and 22,713 in 1877.

As usual, the work commences with a reprint of all the Medical Acts from 1858 to the present time—a reprint which will be always as useful as it is necessary. The list of medical practitioners naturally occupies the largest space in the work. It spreads over 742 pages.

Of course it would be vain to expect that errors or inaccuracies and misprints should be altogether wanting among such a vast number of entries; still we must say that these blemishes are more frequent than should reasonably have been looked for in an official and authoritative volume like this.

So far as Ireland and Scotland are concerned, we are constrained to ask has this arisen in any degree from the exclusion of the Medical Registrars of those parts of the United Kingdom from their legitimate functions in connexion with the keeping of the Registers, and from the irregular, if not illegal, practice of the General Registrar in making alterations as regards the addresses and qualifications of persons, originally registered in Dublin or Edinburgh, without the knowledge of the Registrars of Ireland and Scotland respectively. We could point out many instances of inaccuracies which have manifestly arisen from some such cause, besides some omissions of the names of well-known practitioners and others who are in the public service. We have had before us a long correspondence between the Irish Branch Council and the Executive Committee on this subject, and we are bound to say that it appears to us unaccountable that the Executive Committee should persevere in upholding a practice which is certainly inexpedient and probably illegal—a practice, too, which cannot but be the fertile source of many inaccuracies, and which must necessarily cause serious discrepancies between the General and the Branch Registers. An official declaration that it was intended to discontinue this objectionable system would be very reassuring.

In what we have just written under a strong sense of public duty, we have had no wish to question for a moment the ability, zeal, and high qualifications of the General Registrar, Mr. Miller; they will be frankly and freely admitted on all sides. We hold to the opinion, however, that centralisation, such as is, perhaps

faintly, shadowed forth in the present system of correcting the General Register, is to be deprecated and even resisted to the utmost on grounds of public policy.

The Transactions of the American Medical Association. Vol. XXIX.
Philadelphia. 1878. Pp. 900.

OUR transatlantic contemporaries have issued somewhat tardily the papers read before them in 1877. The volume (a very bulky one) is more suited for retrospect compilers than for ordinary readers, but, at the same time, several of the articles are both useful and interesting. Sectional Addresses and Reports of Committees occupy the first quarter of the book, a prize essay on the "Surgical Anatomy and History of the Carotid Arteries" occupies the last. Amongst the miscellaneous papers may be particularised one on "Intraglandular Injections of Ergot in Goître." Squibb's extract, in doses of 20 minims to half a drachm, was used, and in two cases the results were successful; in another success is claimed for complete removal by the knife of the thyroid gland, but the details given are meagre. The articles on obstetrical subjects are valuable, and well worthy of reference for obstetrical statisticians. One writer records particulars of fifteen cases of hysterotomy, performed chiefly for the removal of interstitial fibroid tumours. Out of this number he had three recoveries. Of the twelve deaths, about half were due to peritonitis, the rest to exhaustion. Dr. Engelmann sums up in an exhaustive way the difficulties and dangers of Battey's operation. He shows, as the result of forty-three cases in which it has been performed, that in order to effect cures rather than "improvements," both ovaries must be completely removed, but he acknowledges that this will involve an increased mortality. Dr. A. H. Smith, of Pennsylvania, advocates the application of the rotating burr (such as is used by dentists) for denuding tissues in the surgery of the female pelvis. He claims that it removes the cuticle rapidly, exposing a clean, smooth surface of freshened tissue, upon which, without any bleeding, there appears almost immediately, a free exudation of plastic material. The vivifying is attended with less hæmorrhage than if the knife or scissors were used—it is painless, it is attended with less contusion of parts, and is more completely under the operator's control. He details several cases where it was successfully employed in closing fistulous sinuses and rents in the perinæum:—"When it is used in cases of

cicatrices extending into the ischio-perinæal fossæ of the vagina, the facility of denuding with the burr is very great in contrast with the use of the knife or scissors, which would require the tissues held up by forceps, and at the same time pouched out by an assistant's finger in the rectum. It is in cases of cervical fissure from laceration, however, in which the advantages of the burr over the knife and scissors will be found most eminent. The thin film to be removed when every atom of sound normal tissue is needed for future physiological dilatation of the canal, the perfect symmetry attainable in the margin of the vivified tissues, the smoothness and equality of denudation from the cusps, allowing an accurate apposition so favourable for union in tissues dense and rigid—all must be found of immense advantage in this important operation." Dr. Gaillard Thomas has used the burr for such cases some months before Dr. Smith's paper appeared, but he had not published his experiments. Dr. Wyeth's prize essay on "The Surgical Anatomy of the Carotid and Subclavian Arteries" is a marvel of careful compilation. Its aim is to prove that ligature of the common carotid for a lesion of the external carotid or its branches, when there is half an inch between the seat of the lesion and the origin of the external carotid, is wrong in principle, unsafe in practice, and should cease to be a surgical procedure. In an analyses of 898 carefully collected cases he shows the death-rate after ligature of the common carotid to be 41 per cent., that after ligature of the external carotid to be only $4\frac{1}{2}$ per cent.

Anatomography, or Graphic Anatomy. By WILLIAM DARLING, M.D., F.R.C.S.; Professor of Anatomy in the University of New York. London: Baillière, Tindall, & Cox. 1879.

UNDER the above head the author has published a series of five anatomical tables, the first two of which are intended to indicate the motor nerves of the intrinsic muscles of the extremities, and they, at the same time, show the names and number of muscles situated on different segments of the limbs, but we believe the information they convey could more readily be acquired from the ordinary anatomical text-books. The third plate indicates, in a somewhat complicated manner, the names and number of muscles divided by incisions passing through the various joints of the body. The most useful of the series is that which enumerates the foramina of the cranium, and the structures they transmit. A synopsis

of the circulation forms the last table, and a diagram is appended which, we venture to think, is far more difficult to comprehend than the plain facts of the course of the circulation which it intends to simplify.

A Description and Explanation of the Method of Performing Post Mortem Examinations. By PROFESSOR RUDOLPH VIRCHOW. Translated from the Second Edition by DR. T. P. SMITH. London: J. & A. Churchill. 1880. 8vo. Pp. 124.

IN this excellent little work the author gives the result of his great experience as to the best manner of making a systematic and scientific *post mortem* examination. If we were to select for special commendation portions of a work of which the whole is admirable, we would point to the descriptions of the examination of the brain and heart. In the former he recommends that the lateral ventricles should be opened, as soon as any superficial changes have been noticed, by incisions carried at first vertically through the corpus callosum, and then horizontally outwards, but not dividing the pia mater on the outside of the hemispheres; then incisions should be made from within outwards through the cerebral hemispheres, at a distance of not more than five millimetres apart, the pia mater on the surface still remaining uncut. He compares the parts thus treated to the leaves of a book, the pia mater acting as the binding. Any single part can be examined, or the whole can be replaced at once, in order to determine the continuity and relations of any morbid portions that may be found. In the optic thalami and corpora striata, where this method is not practicable, he advises radiating incisions, starting from the peduncle, so that the parts can be replaced in the same manner. In the heart he recommends that, after the pericardium has been opened, incisions should be made into the cavities while the heart is *in situ*, in order to determine the quantity and quality of contained fluid, the detailed examination of the structure and valves being postponed till the heart is removed from the body. In estimating the sufficiency of the aortic valves by the water-test, he points out a source of error not generally noticed—namely, that the fluid may drain off through the coronary arteries if large branches of these happen to have been opened in the ventricular incisions. In an appendix are found the German Government Regulations for the guidance of medical jurists in performing *post mortem* examinations; and Professor Virchow

gives the notes of four *post mortem* examinations made in accordance with these Regulations. Lest the amount of detail required should alarm the reader, he expressly states that three hours is sufficient to make a complete *post mortem* examination, even in a complicated case.

In conclusion, we cordially recommend this book especially to the notice of country practitioners when engaged in medico-legal examinations, and it is much to be wished that similar Government Regulations to those of Germany existed in this country.

The Pocket Gray, or Anatomist's Vade Mecum. London: Baillière, Tindall, & Cox. 1879. 8vo. Pp. 188.

THIS little book, which has been compiled for students, belongs to the class of "cram books" of which too many already exist. In the preface the author states that, in order to render it as reliable as possible, frequent references have been made to the leading text-books; but if the compilation had been carefully made, the many errors which exist ought not to have occurred in it. For instance, the inner and outer relations of the second part of the axillary artery are transposed; the great occipital nerve is described as ascending on the skull, with the *vertebral* artery to supply the integuments; and mistakes of a similar nature are frequent. The only point on which we can congratulate the author is that nowhere has he allowed his name to appear in connexion with such a useless and misleading publication.

The Essentials of Bandaging. By BERKELEY HILL, M.B., F.R.C.S.; Professor of Clinical Surgery in University College, &c. Fourth Edition. London: Smith, Elder, & Co. 1880. 8vo. Pp. 323.

THIS excellent work has been revised and much enlarged for the present edition, and all recent improvements which should be found in a manual of minor surgery find a place here. The description of the antiseptic method of dressing wounds has been entirely rewritten by Mr. Godlee, so as to accord with Professor Lister's most recent improvements. Very concise and useful information is given as to the method of performing operations and dressing wounds on antiseptic principles, together with a description of the various materials recommended for this purpose.

The instructions for the administration of anæsthetics remain

unchanged in the present edition, but we think that the few lines which are devoted to the subject of the inhalation of ether are insufficient for the purpose at the present day.

The chapter on Surgical Landmarks and Surface Guides, which appeared in the third edition, has also been revised by Mr. Godlee, and to this chapter we would draw the special attention of the student, as it contains much valuable information of a kind which is too frequently omitted in the teaching of anatomy, and which is of great practical utility.

Sayres' method of treating spinal curvatures is also described.

In conclusion, we most strongly recommend this book to the student and young practitioner, as containing, in an easily accessible form, accurate and concise descriptions of the many details of minor surgery.

A Manual of Minor Surgery and Bandaging. By CHRISTOPHER HEATH, F.R.C.S.; Surgeon to University College Hospital, &c. Sixth Edition. London: J. & A. Churchill. 1880. 8vo. Pp. 328.

THE fact that this little book has reached a sixth edition is sufficient evidence of its continued popularity, and in the present edition the author has, by careful revision and the addition of such matter as the progress of surgery has rendered necessary, considerably increased the usefulness of the work. Antiseptic dressings and Sayres' plastic jackets are both fully described, and in the chapters on Fractures and their Treatment a considerable amount of new matter is to be found. The chapter on *Post Mortem* Examinations will be found of great use, and if the directions of Mr. Heath are carried out, no point of importance will be missed.

The book is one which should be read by every house surgeon and junior practitioner.

TREATMENT OF CHRONIC CATARRH OF THE BLADDER, AND OF SOME FORMS OF ACUTE CYSTITIS.

ACCORDING to Th. Deecke lactic acid seems to have almost a specific effect in counteracting the decomposition of urine. Its antiseptic action is best shown in the proportion of 1 per cent. Deecke gives three times a day and injects into the bladder a solution of $\frac{1}{2}$ to 1 per cent.—*Buffalo Med. and Surg.*, 1879.

K. F.

THE MEDICAL
SOCIETY OF
MEDICAL
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PART III. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1879-80.

HENRY H. HEAD, M.D., President.
GEORGE F. DUFFEY, M.D., Honorary Secretary.

Wednesday, May 5, 1880.

DR. CHURCHILL in the Chair.

Vaccinia Gangrænosa.

MR. STOKES read a paper on "A Case of Vaccinia Gangrænosa." [It will be found at p. 497.] The paper was illustrated by some beautiful coloured drawings.

The CHAIRMAN remarked that in Mr. Hutchinson's case three other children were vaccinated with the same lymph without any bad result. This fact was absolutely fatal to the notion that it was the vaccine lymph that did the mischief. It must have been something in the child itself that caused the disease, the vaccination being only an exciting cause of some latent complaint. In Mr. Stokes' own case the child showed the purple spots forty-eight hours after the vaccination; whereas in ordinary cases he did not think there would be anything to see thirty-six hours after the vaccination except a very faint areola. He did not see how they could come to any other conclusion than that this disease was merely coincident with, and had no relation to, the vaccination, and that it had been given an exceedingly unfortunate name.

DR. MONTGOMERY reminded the meeting that the vaccine vesicles were stated to have run a natural course in all the cases reported. The vaccination might have made the original disease, whatever it was, take a more serious form than it would otherwise have done.

PROFESSOR SINCLAIR said that the title which had been given to the paper was a most unfortunate one. There were a great many persons

hostile to vaccination in England, but not so many in Ireland, and these anti-vaccinators would eagerly seize the title of the paper as an argument against compulsory vaccination. It was very remarkable how few cases had occurred like the present; and, on the other hand, whenever a case of the kind had occurred it was at once exhibited. If disease were dormant in the body of a child before vaccination the fever of vaccination would bring it out. During the time when variola was very rife two children were brought to him to be vaccinated from houses where variola existed. He told the people who brought them that they might be sickening of smallpox, and that if they had it in their constitutions the vaccination would not protect them. One of the two came back covered with smallpox, but with the vesicles from the vaccination perfectly developed, and that child died. The other came back without the smallpox, but with the vesicles developed in the same way. Where the smallpox had been incubating for only a short time the vaccination was a protection, yet the mother was persuaded that he variolated both. He did not think the diseases that occurred in the cases before them had anything to do with the vaccination. The case was made further doubtful by the circumstance that the gentleman who was said to have vaccinated them had denied that he did so. When they remembered the thousands of cases that were vaccinated, how seldom was it that the great bugbear of vaccination, syphilis, was brought forward.

DR. DOYLE asked was any lymph taken from the child and examined microscopically or chemically?

DR. DARBY remarked that the doctrine of septicæmia or blood-poisoning had prejudiced the more enlightened classes strongly against vaccination, and they were glad to catch at any case like that brought forward by Mr. Stokes as an argument against having their children vaccinated. Mr. Stokes' case was almost a portrait of a case of pemphigus gangræ-nosus that he had seen some years ago.

DR. J. W. MOORE said no one would accuse him of being an anti-vaccinator. Two arguments had been brought forward by Mr. Stokes and by one or two other speakers against the connexion of the skin affection in these cases with the vaccination. One was that the skin affection could not have depended on the vaccination, because other children had been vaccinated with the same lymph and no untoward results had followed. That was an exceedingly injudicious argument at all events. The practical point was that too great care could not be exercised in selecting the children on whom the operation of vaccination was to be performed. It was quite clear that the receptivity of the child in question to morbid processes was exceedingly high. The other argument which had been put forward was that vaccine vesicles in the cases in question did not undergo any gangrenous action. The explanation of that was perfectly clear if we accepted the hypothesis that the peculiar

skin affection in the present instance arose from a septic fermentation. The virus required time for its poisonous properties to develop, and before this happened at the situation of the vaccine vesicles the virus had escaped into them from the system, and so its influence for evil was neutralised. At the same time he did not venture to give any decided opinion as to the connexion between the vaccination and the occurrence of this gangrenous eruption.

DR. MACSWINEY concurred with those who dissented from the name attached to the paper. It was greatly to be regretted that the paper had appeared in the form it had; if it were inverted it would do to prove the impropriety of such a name, for the burden of it towards the close went to show that it was in the highest degree improbable that this gangrenous affection had been produced by the vaccine lymph. It could not be supposed that any individual there was imbued with the heresy that vaccination was not one of the greatest blessings that had ever been conferred upon humanity, and had not averted an immense amount of evil. Therefore the title of the paper might advantageously be altered. It was important that Dr. Sinclair had told them that no such disease was known in the records of the Vaccine Department of the Local Government Board. The probable explanation of this case was that some latent disease in the child had been called into activity by the operation of vaccination.

DR. DUFFEY said Dr. Moore's first argument was fully borne out by what had occurred in the case of an analogous disease—*varicella gangrænosa*. A remarkable case of that disease was lately reported at a meeting of the London Pathological Society. A child was admitted to hospital suffering from varicella. A fortnight before its admission four other children had been admitted suffering from the same disease. The day after its admission a sixth child exhibited the characteristic eruption of varicella. The child which was the subject of the case died. None of the other children exhibited any of the gangrenous spots that that child did, although they had exactly the same eruption. A *post mortem* examination showed ulcers in the intestines, and the intestinal and mesenteric glands were tuberculous. As Dr. MacSwiney had said, the previous condition of health of that child must have been such as to create a peculiar receptivity for the poison which induced such a fatal result. In the course of the discussion it was brought out that in all the cases of *varicella gangrænosa* that had proved fatal there was a tuberculous condition of the glands. He would ask Mr. Stokes was there any family history of a tuberculous tendency in the child in question?

DR. HARVEY said he would be very sorry to throw any hindrance in the way of vaccination. It was most unfortunate that the public mind should have become imbued with a ridiculous heresy as to the danger of it; and he believed they ought to do everything they could to remove

the difficulties that existed in the way of a much more general vaccination than prevailed at present; and the first step towards removing those difficulties was to face them honestly and fairly. He should be extremely glad to be able to conclude that it was a mere accidental circumstance that this child, after having been vaccinated, had those spots. He could not come to that conclusion absolutely, but would leave the question an open one. He did not think they should speak of such a thing as gangrenous lymph. Again, was there such a thing as vaccinia at all, or were they to speak of a diseased condition called vaccinia, characterised by a febrile movement, and accompanying the maturing of the vesicles in the arm? In some of the most eminently successful vaccinations there had been more or less of a red eruption in the course of the disease. He assumed he was right in speaking of a distinct febrile condition called vaccinia. It differed in its course, independently of the condition of the lymph originally introduced into the system, owing to a number of different causes. He did not think they could consider that there were two distinct poisons in the lymph—one giving rise to the gangrene, and the other to the vaccine vesicle. He thought that in this particular case, owing probably to some circumstances in the child itself, the disease took on it a gangrenous form. It was a mistake to imagine that the rapidity of the appearance of the spots was a proof that there was not a very distinct connexion between the vaccination and the appearance of those gangrenous spots. They knew that pyæmic eruptions appeared very rapidly. He could not approve of the proposition that vaccination had nothing to do with the illness of this child; still he believed that bad as the disease was it was a great deal better than smallpox.

DR. HENRY KENNEDY said the disease now brought under their notice was one that existed independently of vaccination. He had seen numbers of such cases amongst the poor. During the smallpox panic he vaccinated a lady, using vaccine lymph which he got at the Institution in Sackville-street, Dublin. Within thirty hours afterwards that lady presented most formidable symptoms. She was seized with great depression, fainting, violent vomiting, and fever; the vaccinated arm, although the vaccine incision had been made excessively small, rapidly became red, and even dark black; and in the course of the third day a considerable slough formed at the part vaccinated. In that case the symptoms that showed themselves were attributable to her general condition. He believed that in her condition the wound of a perfectly unarmed lancet would have produced the same thing, for it was well known that if the system was in an unhealthy state, the slightest wound in the world would produce disease. He, therefore, put down what occurred in this case to the constitution of the child. It might have been better to have headed the paper "*A Case of Pemphigus Gangrænosus.*"

DR. WRIGHT maintained that there was no analogy between the case

detailed by Mr. Stokes and that reported by Mr. Hutchinson. In the latter they had a rash coming on after the vaccination virus had gone through the system, and after the child had been three weeks vaccinated. In Mr. Stokes' case they had the purpuric rash coming on forty-eight hours after the vaccination had been performed. The diseases represented by the pictures were also different.

DR. C. F. MOORE said a very good drawing of a case of "burnt holes," which occurred in Cork-street Fever Hospital, reminded him of the case before them. The child was eight or ten years old, and there was no allusion to vaccination whatever. He had been for fourteen years physician to Cork-street Fever Hospital, and for fifteen in the dispensary, and had seen other cases of "burnt holes," but never heard them attributed to vaccination. Six years ago a return was made in Scotland of 52,000 cases of persons vaccinated from public institutions, and out of all these two got erysipelas, of which one died. In England, in 1878, there were 9,000 cases vaccinated with lymph supplied to several hundred practitioners from a central depôt in London, and, with respect to these, not one complaint was made of any serious illness arising from the use of the lymph. There were some cases of irritation, but not a single case of serious illness. He, himself, had vaccinated more than 5,000 children, and he never came across a case of vaccination in which there were gangrenous sloughs. It was illogical to say that there was anything wrong with the lymph with which three children out of four were safely vaccinated.

DR. CORLEY said the observations which had been made by one gentleman as to the difference between the cases represented in the pictures merely illustrated a difficulty connected with skin diseases in general. They all protested against vaccination getting the credit of an unfortunate occurrence like the present.

MR. STOKES (in reply) said amongst the difficulties he had in accepting Mr. Hutchinson's views was the fact that three of the children vaccinated were not affected with the disease in question. He could not agree with Dr. J. W. Moore in his opinion as to the vesicles not being affected with gangrene. He could not but think that if they were the points of introduction of the alleged poison they would also have been the starting-points of the gangrenous disease. Yet, in both Mr. Hutchinson's case and his, they enjoyed a complete immunity from the gangrenous process. That chiefly made him doubt the desirability of introducing the term *vaccinia gangræna* into their nosology, although he was not disposed to alter the heading of his paper. He did not examine the lymph microscopically, because he did not believe that any microscopical examination of it would throw much light on the subject. He inquired closely into the family history of his patient, and obtained no evidence whatever of tuberculosis or of a scrofulous diathesis.

The Society then adjourned.

THE DUBLIN
SOCIETY FOR
MEDICAL
OBSERVATION

PROCEEDINGS OF THE DUBLIN OBSTETRICAL
SOCIETY.

FORTY-SECOND ANNUAL SESSION.

EDWARD B. SINCLAIR, A.M., M.D., President.

WILLIAM ROE, M.D., Honorary Secretary.

Saturday, April 3, 1880.

E. B. SINCLAIR, A.M., M.D., President, in the Chair.

Exhibition of a Monster born in the Rotunda Lying-in Hospital.

DR. ATTHILL said: On being called to see a woman in labour I found protruding from the vulva a portion of intestines like those of an adult. I understood that the patient had been upwards of twelve hours in labour, under the care of a midwife, who had brought her to the hospital. The presumption on my mind was that rupture of the uterus had taken place; that the midwife had pulled down the woman's intestines, and that the patient was moribund. On feeling her pulse I was surprised, however, to find that it was quiet and regular, and I at once saw that my suspicion of improper treatment was unjust. On passing my hand into the vagina I found that I could trace the intestines inside the os uteri, and could feel nothing else except an irregular mass. I was then satisfied that I was dealing with a monster. I also felt an arm, and passing up a blunt hook I got it over the child's shoulder, and, without any very great difficulty, delivered the woman of this monster, notwithstanding that the head is of very large size. It will be seen that the entire of the lower anterior portion of the abdominal wall is wanting, the intestines and the liver are free, and the legs are malformed. As far as I am aware the specimen is unique. I thought it to be of medico-legal interest, as a case that might have been mistaken for the result of malpractice or accident. The child was dead. The protruded intestines were immensely distended, and as large as those of an adult.

DR. ATTHILL also exhibited two intra-uterine polypi which were taken from an unmarried woman, aged thirty-five.

Acute Hydramnios. By ALFRED H. M'CLINTOCK, M.D.

As dropsy of the amnion is not a rare disease, and, moreover, as it formed the subject of a valuable communication from Dr. Kidd, not long ago, my remarks will necessarily be somewhat restricted. I wish chiefly

to direct attention to what may be called the *acute* form of the disease. In the mild or chronic cases, which are those most commonly met with, the patient has little to complain of beyond the unusual size and weight of the uterine tumour, the accompanying symptoms not being such as to give rise to any serious indisposition, or to any alarm respecting her state.

Now it is of some importance to know that the disease is capable, on rare occasions, of producing a train of symptoms not only most distressing to the patient herself, but sufficiently grave to awaken fears for her safety in the minds of her friends, or even of her medical attendant. To be able to recognise these symptoms, and trace them to their true source, and so to pronounce a correct prognosis, is a matter of some consequence.

The pathological cause of dropsy of the amnion has not yet been clearly made out. On this part of the subject I regret to say that I have nothing new to offer. In the cases about to be related, while the amnion itself presented no appreciable morbid appearance, the placenta deviated considerably from its normal condition, being greatly enlarged, pale, remarkably soft, and evidently cedematous.

Simpson made the observation that diseases of the placenta are very apt to recur in the same individual, and my own experience strongly corroborates this. Such a fact suggests a probability of the disease having, in some degree at all events, a constitutional origin.

It is asserted, by Lange I think, that an cedematous condition of the placenta—to which I have already alluded—is present in all instances of amniotic dropsy. If this be not the strict truth, it certainly is not far removed from it, as in nearly all the cases of the disease in question which have come under my notice, the placenta exhibited more or less of a morbid condition. For this reason, and also because the vascular nutrient supply of the amnion would seem to be derived from the placenta, I am led to believe that in the great majority of cases the dropsical effusion into the amniotic sac has its primary cause in the afterbirth. At the same time I would be slow to deny that inflammation of the amnios may sometimes produce the dropsy. This qualifying statement I make in deference to the authority of M. Mercier, who ably advocated this view, and supported it by some highly illustrative cases.

I shall now briefly lay before you the leading features of three cases, which will serve as good illustrations of the *acute* form of dropsy of the amnion.

CASE I.—In the spring of 1878 a lady engaged me to attend her at her tenth confinement, which she expected about the 20th of July, dating from the last appearance of the catamenia. Her first and second children were born alive, at the full time, and have survived, but all her succeeding pregnancies—and they were seven in number—had terminated prematurely, the children being dead, and more or less decomposed,

with an excessive quantity of liquor amnii. She had been subject at times to bronchitis, but beyond this both she and her husband were very healthy.

During the month of May her size rapidly augmented. She suffered much from loss of sleep, restlessness, flushings, palpitation, heat of hands, headache, and pyrexia, with extreme rapidity of pulse; abdominal pains, and general malaise. There was some cedema of the lower extremities, but no trace of albumen in the urine.

On the 1st June (that is, about six weeks before the expected period) she fell in labour, and after some hours expelled a small male child, far gone in decomposition, but not exhaling any foetid odour. There was an enormous quantity of thick offensive liquor amnii. Considerable hæmorrhage ensued, and I had to extract the placenta, which was fully three times the normal bulk, cedematous, pale, soft as porridge, insomuch that it required the hand to be passed into the uterus three several times to effect its removal; and, even so, some fragments remained behind, and were discharged in the course of the next few days. She recovered slowly, but perfectly, and quite regained her health.

CASE II.—Last May (1879) this lady again conceived, and up to the period of quickening, or thereabouts, enjoyed unusually good health. Soon after this I put her on the use of chlorate of potassium and iron, which very much disagreed with her, and had to be discontinued. I then tried both these remedies separately, but with no better result. Early in December she began to notice a rapid increase of her size, and at same time all her old symptoms came on with great acuteness. The pulse never was below 100, and on the slightest excitement, or after any stimulant however mild, it got up to 120 or 130, with general heat and thirst; she had frequent abdominal pains, slept badly, and had no appetite. Her condition now became extremely distressing, as she had no respite from pain, or annoyance of one kind or another, and she was entirely confined to bed or the sofa. Nothing I could do gave her any ease, except morphia in small quantity, which relieved the abdominal pains, and procured her some sleep. Her husband and friends now became so much alarmed at her weakness, constant pain, and persistent rapidity of pulse, &c., that Dr. M'Donnell was asked to meet me in consultation, with a view to see if there could be any cause for these symptoms other than the gravid state. None such, however, could be discovered on the most careful investigation. Towards the middle of December, and when she was about six and a-half months gone, her size exceeded that of a normal pregnancy at full period. On the 28th December labour pains set in. As soon as the os was nearly fully dilated—no presentation being then tangible—I ruptured the membranes, and found a leg presenting. This I seized and brought down, and quickly extracted a decomposed male foetus. There were several pints of liquor amnii. The placenta

was enormously large, but not quite so pale or soft as on the last occasion, and was expelled without any direct manual interference.

She recovered perfectly, but what struck me as being most remarkable was the rapidity—I might almost say the suddenness—with which all her distressing symptoms subsided from the very moment of delivery; so that her convalescence was in the highest degree satisfactory.

I was much disappointed in this case, at the signal failure of a line of treatment which has proved on many occasions so successful in preserving the life of the foetus.

CASE III.—About the time the last labour occurred, another lady, from a distant part of Ireland, came under my notice, whose obstetric history was as follows:—In her first pregnancy she went to term, and was confined, under my care, of a daughter, dead, but evidently not more than two or three days so. Its death seemed attributable to the accidental separation of a part of the afterbirth, and hæmorrhage consequent thereon. Her second child was a boy born alive at term; her third child also a boy born alive at full time; her fourth child a girl, born weakly, and died jaundiced, on the third day; her fifth was a boy, born prematurely, and dead for some days previously; the quantity of liquor amnii on this occasion was greatly in excess. Her sixth was also a boy, and born dead under exactly the same circumstances as the last, with the addition of hæmorrhage *post partum*. Three months after this confinement she came to me to be treated for uterine catarrh, abrasion of the os uteri, and slight posterior misplacement of body of the womb. After a couple of months she was much improved and again conceived—this being her *seventh* pregnancy. Soon after quickening I began to try my favourite remedies of chlorate of potassium and iron, separately and combined, under every possible form, in the hope of prolonging gestation or saving the life of the foetus. But, as in the former case, they disagreed so much that I had, very reluctantly, to relinquish their administration altogether. From the commencement of this pregnancy she had remarked her size to be greater than on any former occasion; but towards the middle of the sixth month she noticed the uterine tumour to undergo a rapid increase of bulk; and about the same time she began to experience loss of appetite and sleep, thirst, and feverishness at times most distressing. There was a constant feeling of restlessness and discomfort, so that she was deprived of all enjoyment, and spent her time in bed or on the sofa. Somewhat later she had frequent abdominal pains evidently due to uterine contractions. There was also slight œdema of the feet and ankles, and the urine showed a faint cloud of albumen. I tried the effect of different remedies—such as diuretics, febrifuges, anodynes, &c.—but without any satisfactory result.

On the 13th February—being about the middle of the seventh month of her pregnancy—she was delivered of twins, a male and female, after

a tedious labour. Both children were dead, and partially decomposed. She was attended for me by Dr. Symes, of Kingstown, who thus writes about her case:—"The children appeared to be dead for some days, as the cuticle was peeling off. There were two placentæ, each very large and very soft, and a very large quantity of liquor amnii with each of the children."

About a week before labour I saw and carefully examined this lady, who was then confined to bed, and suffering extreme distress and annoyance from the group of symptoms I have already pointed out. The abdomen was much distended. I regret much I did not measure it; but certainly it was large even for the full term of pregnancy, though this was still nearly three months distant. No foetal heart could be detected, nor foetal movement felt. On vaginal examination I was surprised to find the presenting head in close apposition with the os uteri, and not to be displaced by any ordinary pressure of the finger. Relying on this diagnostic, I ventured to predict to her husband and friends "that she would most probably give birth to twins," which, as already stated, turned out perfectly right, and confirms the correctness of the observation I made on this diagnostic point in my original memoir, published seventeen years ago.* I would just remark here that both in this and the former case occasional hardening, or contraction, of the uterus, was perceptible long before the accession of labour. This sign would help us to differentiate, in any doubtful case, between ascites or ovarian tumour, and dropsy of the amnion.

My failure to arrest the disease after the symptoms of its presence had manifested themselves is only what has fallen to the lot of all other practitioners, I believe. When this form of dropsy sets in at any considerable period before the end of the ninth month—*e.g.*, at the beginning or middle of the sixth month of utero-gestation—the life of the foetus will, pretty surely, be compromised; but where the dropsy does not arise till near the end of pregnancy, there is some chance for the child. In any case, however, this complication must be regarded as exercising a most prejudicial influence upon foetal life. In none of the cases falling under my notice where, apparently, pre-natal treatment was successful in preserving the life of the foetus, this amniotic dropsy did not enter into the case, whilst in the cases I have here recorded, and others that could be adduced, all treatment has signally failed to preserve the child when the hydropic condition was present.

In neither of the patients, whose cases are reported in this paper, was there the remotest reason to suspect the existence of constitutional syphilis, and this is quite in accordance with my previous experience of the complaint.

I have just mentioned that hydrops amnii is frequently associated

* *Clinical Memoirs on Diseases of Women*, p. 330.

with the death of the foetus. In proof of this it may be mentioned that of 43 children born where the disease existed, 20 were born dead, and 16 of these had ceased to live some days or weeks before labour set in, and 11 of those born living died within a few days after birth. These facts are very striking, and tend to invest the disease under consideration with a high degree of importance. The question here arises—Is this fatality a consequence of the dropsy, or an effect in common with the dropsy, of some antecedent pathological change going on in the placenta, the sole organ of foetal nutrition? The latter is the view I hold, though unable to produce any demonstrative evidence in support of it.

I have stated that medical treatment, so far as I am aware, seems incapable of arresting this intra-uterine disease. Iron, the salts of potassium, diuretics, digitalis, purgatives, febrifuges, anodynes, and mercury, have all been tried and found useless, or worse than useless. Arsenic is the only drug that seems to hold out any prospect of being serviceable, but I have not tried it, nor do I know if any one else has done so. The induction of premature labour might prove a valuable alternative, but should be restricted to cases where the symptoms appear late in the seventh month, or subsequently, in order that the child may be viable at birth. It was plainly inadmissible in the foregoing cases, so far as the interests of the foetus were concerned.

Let me now bring this paper to a conclusion by very briefly summing up the general results of all the cases of amniotic dropsy coming under my cognisance, and of which I preserved notes.

Their total number amounts to 43; 4 of the mothers died. In 23 instances labour came on prematurely; 32 of the children were females, and 13 were males; 20 of the children were dead born, of whom 16 were in a more or less decomposed state. In only 36 instances was the presentation noted, of which 25 presented the head, 10 the pelvic extremity, and 1 the upper extremity.

DR. PUREFOY.—Some years ago a case came under my observation of a woman who had had one or two healthy children, and two or more afterwards still-born. I had some suspicion of the existence of lues venerea, but no definite grounds. The woman came under my care for an enlarged uterus, and shortly afterwards became pregnant. After three months she became troubled with a pain in her side, indicating a diseased condition of the placenta. Owing to having seen Dr. M'Clintock's observations on the subject, I treated her with chlorate of potassium and tincture of iron. After taking these medicines for a few weeks the pain subsided, and she went on to delivery and had a tolerably healthy child, although it had some affection of the palms of the hands and soles of the feet. She has had another healthy child since.

DR. HENRY KENNEDY.—An anonymous letter appears in the “Transactions of the College of Physicians,” in which attention was for the first time directed to the fact of children being born alternately healthy and diseased. Some of the cases mentioned in that letter are exactly like those which Dr. M’Clintock has mentioned.

DR. KINKEAD.—A short time ago a case bearing on this subject came under my notice. It was that of a healthy young woman of a respectable class, from the country, whose husband had always been healthy, and there was no reason to suspect venereal in either of them. I did not attend her in her first confinement, but ascertained that her child died four or five days after its birth. I attended her in her second confinement, and saw her six weeks before her time was up. She was then of an enormous size, had a difficulty in lying down, and a pain in her side. Her labour came on by the waters escaping suddenly while she was out walking. She came home and had a rapid labour, and after the child was born there was the most enormous gush of water I ever saw. There was a tendency to hæmorrhage. After she became pregnant of her next child I put her on chlorate of potassium and tincture of iron, and she was afterwards delivered of a healthy child. The child of her next confinement was a miserable badly nourished infant, and died within two days after its birth. Its circulation was so bad that if you put it lying on its side its under-limb would become black. In her confinement after that the woman had a strong healthy child.

DR. ROE.—A few months ago I was called to see a lady who became suddenly very large when she was about six and a half months pregnant. After making a careful examination I concluded she was suffering from dropsy of the amnion. On making a vaginal examination I found a head presenting, but could feel no membranes whatever. The os was not much dilated. On the following day I had a consultation with Dr. Kidd, when, on making a vaginal examination, we found a child lying in the vagina. There had been a good deal of pain all the previous night, and a large quantity of water had come away. I took away this child. It appeared to be of about six months, and was somewhat decomposed—having, I believe, been dead for some time. The membranes of another child then presented, which I ruptured. There was now a fearful gush of water, amounting in quantity to fully seven quarts. Another child presented, by the feet, which I delivered; it was about the same size as the first, and was also decomposed. The two placentæ, which were very small, came away together without any difficulty. The uterus did not contract very rapidly, and a good deal of bleeding ensued, but the patient made a very good recovery. This lady has had several healthy children and never had a miscarriage, and there was no reason to suspect the existence of syphilis.

DR. M’CLINTOCK (in reply).—In my former memoir I called the disease

dropsy of the ovum, in order to include cases where the accumulation of fluid was within the chorion and external to the amnios. I do not deny that syphilis might be the cause of the disease; I only say that in the cases I have brought forward there was nothing to justify the supposition of there having been any syphilitic taint.

The Society then adjourned.

Saturday, May 1, 1880.

E. B. SINCLAIR, A.M., M.D., President, in the Chair.

Craniotomy and its Alternatives.

The discussion on Dr. Kinkead's paper on "Craniotomy and its Alternatives," which had been adjourned, took place.

DR. KIDD.—It must be apparent to everyone who has watched the progress of obstetric opinion, that there has been a well-marked desire manifesting itself for many years past to avoid, as far as possible, the operation of craniotomy. Dr. Kinkead's paper has brought into a focus the opinions bearing on the subject, showing in a manner, that, I hope, will burn itself into the minds of all, that the operation is one always to be approached with hesitation and great reluctance. The question Dr. Kinkead has brought before us is as to the performance of craniotomy or alternative operations in cases of extreme narrowing of the pelvis; but before entering on this subject, I must, to avoid the risk of misapprehension, draw your attention to a class of cases to which he has not thought it necessary to allude. There are cases in which the diminution of the pelvis is not so great as in those alluded to by Dr. Kinkead, but in which the child could not pass through the pelvis in an un mutilated condition. It is impossible to fix exactly the limits of dimensions in these cases. Authors variously mention antero-posterior diameters of from $3\frac{1}{4}$ inches to 3 inches, or less, as the smallest through which a living child may pass. At the bedside I believe this difficulty can never arise, where you can have opportunities of comparing the size of the head lying above the pelvis with the size of the pelvis itself, and can apply a forceps carefully once or twice, besides having the assistance of a person in whose judgment you have confidence. If we are once satisfied, after due and careful trial, that we cannot bring the head through in an un mutilated condition, and that delivery can be easily and safely effected by the operation of craniotomy, I maintain that it is our duty to lessen the head, and to deliver the woman. I say this, viewing the question from a purely obstetric point of view, which is the only one that we here, and in this Society, are called on to consider. We hear that the danger of craniotomy is greater than that of Cæsarean section; and that applies, it is true, to extreme cases, but not to the cases of which I speak.

In the cases of which I speak it has been shown conclusively by Dr. M'Clintock that the danger of craniotomy is really not as great as the danger of delivery by the forceps, provided it be done judiciously, and before the patient's condition has been so run down that she would probably die, no matter what operation was performed. We come now fairly to the question of the danger of craniotomy in cases of extreme narrowing of the pelvis. Dr. Kinkead has shown that all the great leaders of obstetric medicine have been fully aware of the great danger and difficulty attending the operation of craniotomy, and are, therefore, ready to discuss Cæsarean section, or any modified form of it, as a substitute. It is important to note that these cases are of rare occurrence. Early in my connexion with the Coombe Hospital I came to the determination that if ever I met with a case of this kind, I would very carefully consider the propriety of performing Cæsarean section, instead of proceeding to craniotomy; and I remember a conversation with you, Mr. President, as one of the consulting accoucheurs to the hospital, in which you said you were prepared to stand by me in performing Cæsarean section. I mention this to show that I am not prejudiced against Cæsarean section; on the contrary, I believe craniotomy, under such circumstances, is attended with extreme danger to the mother. Fortunately, however, as I have said, such cases are of very rare occurrence. I have been for thirty-two years more or less closely connected with the Coombe Lying-in Hospital. During that period 2,000 patients on an average were delivered under our care in each year; and, looking back on those years, I can only call to mind one case in which the present question would have arisen. I have already put that case on record. Had that woman come to the hospital with a living child in her womb, I would have canvassed very carefully the question of how she was to be delivered. But she was brought from the Dublin mountains on an ass's cart, with the child, which had presented as a footling, hanging out from the vulva, its head above the brim of the pelvis, the neck torn through, and the body attached to the head only by a fragment of skin. In such a case, of course, the alternative of Cæsarean section or craniotomy could not arise. She had exostosis of almost every bone in her body, one of which grew from the sacrum, and obstructed the brim of the pelvis. I delivered her with the cephalotribe, and she recovered without any bad symptoms, and left the hospital in a fortnight. After the most careful examination that we could make of her on that occasion, we found that she had an antero-posterior diameter of the brim of not two inches. Her case greatly modified my opinion on the question of Cæsarean section. She came back twice after that to the hospital, and on those occasions also I delivered her safely, and she recovered without any bad symptom. When she was last in the hospital I told her that this work of killing children was one that must be stopped, and that it was her bounden duty

to avoid the risk of pregnancy. Her husband seemed satisfied, but they must have changed their minds, for I heard that she afterwards became pregnant, and died undelivered. I believe the question of craniotomy or Cæsarean section to be one that must be decided by each man's own experience, and that it cannot be decided by any statistics that have been produced. If I could deliver a woman with a cephalotribe, I would be sorry to expose her to Cæsarean section in any of its forms; so that, notwithstanding the statistics laid before us by our American brethren, and so ably collected by Dr. Kinkead, I do not accept the proposition that, even with so narrow an antero-posterior diameter as two inches, it is our duty, without considering anything else, to perform Cæsarean section. Dr. Kinkead has alluded to cases where labour is obstructed by a tumour lying in the pelvis. I have twice brought that subject before the Society myself. The same rule, I think, applies to such cases as to those of narrowing of the antero-posterior diameter. If you have a tumour occupying the brim of the pelvis which you cannot push away, or diminish in size by tapping, the question of Cæsarean section or craniotomy very fairly arises. Under such circumstances, I believe Cæsarean section would probably afford the mother a better chance than dragging the child through the pelvis, lacerating or bruising the tumour, and perhaps setting up inflammatory action. But if it should be found that there was reasonable room for bringing the child through, I would hesitate very much, even in that case, before performing Cæsarean section. But, as I have said, the question must be decided not by statistics, but by the circumstances of each case. The same thing applies to the third class of cases that has been referred to. If you have malignant disease of the uterus, with the cervix greatly thickened and hardened, and perhaps a scirrhus mass developed in it, and the woman is in labour, you will perhaps deliver the woman more easily, and give her a better chance of prolonging her life, by performing Cæsarean section than by attempting craniotomy. But if it be a case of epitheliomatous disease, with no great induration or surrounding infiltration of the tissues, you will probably deliver her more safely by craniotomy than you would by Cæsarean section. But I do not think it is possible to lay down any rule on the subject. The facts of each case must determine what is the mode of procedure to be adopted. As to the mode in which the Cæsarean operation should be performed—whether you should cut down through the abdomen, open the vagina, and deliver through the os uteri, or whether you should remove the whole uterus along with the child—I have formed no definite opinion. I have had no experience; but looking at the matter *à priori*, and from the descriptions I have read of the three kinds of operations, I am inclined to think that the easiest operation, and the one likely to be attended with the best results, would be the old-fashioned Cæsarean section.

DR. M'CLINTOCK.—Although I have been for thirty-seven years actively engaged in the practice of midwifery, and during eleven years of that time in an hospital where there were a great number of deliveries annually, I never but on two occasions came across cases in which the question of Cæsarean section could really for one moment be entertained. In this country the occurrence of extreme contraction of the pelvis is very rare. Dr. Kidd's experience and my own give only three cases where the question of Cæsarean section could have been seriously entertained. Where there is only a slight degree of deformity of the pelvis, it requires a great amount of judgment to decide on the course to be pursued. But if you meet a moderately undersized pelvis, and if attempts by turning fail to extract the head and you know the child has ceased to live, one need not then hesitate to resort to perforation. But supposing that the forceps has been tried and has failed, and that turning is impracticable, what are you to do? I agree with Dr. Kidd that in such a case no man of sense would think of proposing Cæsarean section. Here is a woman who has been a considerable time in labour, and if she be now subjected to hysterotomy no chance of life would remain; whereas by the performance of craniotomy there is every human probability that her life would be saved. We are indebted to Dr. Kinkead for bringing before us Porro's operation, which is hardly known in this country. No doubt the desire of obstetricians for many years past has been to lessen the frequency of embryulcia, and in that desire I heartily concur. Every man having the honour of the profession at heart should do his utmost to remove from the category of operations one so revolting to every feeling of our nature. At the same time I am not so sanguine as to expect that it ever will be entirely removed. With regard to the diminution in the frequency of this disagreeable operation I may say that the rising generation may congratulate themselves on the great progress in that direction which has been made during the last fifteen or twenty years by the early use of the forceps. So far as I can form an opinion, without having had direct experience, I agree with Dr. Kinkead that craniotomy, in cases of extreme pelvic deformity, has been attended with nearly as large a rate of mortality as Cæsarean section performed *early* in labour. A large number of statistics bring this result out. With respect to Porro's operation, Dr. Harris, in a report published in *The American Medical Journal*, has collected 86 cases, in 18 of which the mothers recovered and 82 of the children were saved. These results certainly, as far as statistical results go, incline me to that operation.

DR. DARBY.—I think that in those rare cases alluded to by Dr. Kidd and Dr. M'Clintock, where the woman has a bony exostosis or tumour in the passage, I would be disposed to perform Cæsarean section, and give both mother and child a chance, although it might be a bad chance for both under the circumstances.

DR. DILL.—I quite agree with everything that Dr. Kidd has said, except in one point. He said that after having delivered his patient a third time safely, he sent her home with instructions not to become impregnated again. That way of putting it goes to the root of the whole subject. I would say, that instead of giving her loose, indefinite instructions on the subject, the second party should be given instructions also.

DR. MACSWINEY.—It seems to me that gentlemen have not sufficiently kept in view that Dr. Kinkead's paper simply puts before us the question of craniotomy on the one side, and its alternatives on the other. Dr. Kidd has laid down the recognised dictum, that in those cases where delivery cannot be effected by the forceps, after one or more efforts, recourse must be had to craniotomy. That is the rule laid down at present. That is, of course, attended with results in the highest degree favourable to the mother, and the question with regard to the infant does not arise. But there is another class of cases in which the deformity is so extreme that the result to the mother is not by any means so favourable as in the first case. The scope of Dr. Kinkead's paper appears to me to be that sufficient attention has not been directed to the question as to whether it is not more advisable, having regard to the safety of the mother and the possible safety of the child, to have recourse to Cæsarean section rather than attempt the dangerous operation of craniotomy. He seems to challenge the dictum of obstetric surgery which says that the operation of craniotomy is a proper one to perform, and, in challenging it, he suggests that the reason why Cæsarean section has been attended with such unfavourable results in this kingdom is, that it is not performed in proper time, and when there is a fair chance of its proving beneficial to the mother. What I understand him to say is, that the Cæsarean operation has never received a fair trial in these kingdoms, contrasting it with the operation of craniotomy in those cases where craniotomy or its alternatives must be performed. I do not think that either Dr. Kidd or Dr. M'Clintock have addressed themselves sufficiently to this suggestion. The mortality from Cæsarean section in this country has been, no doubt, very great. The objectors to it urge that enormous mortality of the mothers and the very few children that are saved. Dr. Kinkead suggests that that mortality is so enormous because the operation is not performed in proper time; and the effect of his paper, I think, is that obstetricians must either show that he has not made out a case for Cæsarean section, even when performed under favourable circumstances, or must admit that they are bound to resort to that operation, performing it at a proper time, rather than to craniotomy.

DR. KIDD.—I fear I have misconveyed my meaning. I have always been ready to consider Cæsarean section in cases of extreme narrowing. At the same time, judging from my experience of the only case I ever had of extreme narrowing, the tendency of my mind is in favour of craniotomy.

The PRESIDENT.—I wish to say one or two words on this important subject. Having a large class of young men to teach, this question has often struck my mind most forcibly. Cases will occur in the practice of midwifery where operative interference becomes necessary. In one class the forceps is tried, and it is found that no power we can use with it will bring forth the head. Though in such cases craniotomy is facile—in fact, an operation which will not in the least compromise the safety of the mother—are we in such to perform Cæsarean section? There are other cases in which the forceps fails, yet the narrowing is not so great as would make craniotomy very serious to the woman, although it would be more so than in the previously-described class. Are we to cut the woman open in these cases? I say certainly not. She has hardly any chance of losing her life by the operation. But when we come to cases of extreme narrowing, where craniotomy cannot be performed without lacerating the parts, and where we find from examination that the operation would be so seriously dangerous to the woman that in all probability she would die under or after it, then Cæsarean section ought to be performed in preference to craniotomy. With regard to the mortality from craniotomy, the fair way to state it is this:—In the first two classes of cases I have mentioned the mortality from craniotomy is almost *nil*, while in cases of extreme narrowing it is not even 1 to 4, but 1 to 2. These are the cases where Cæsarean section comes in as an operation of selection. If, as in the case of the unfortunate woman mentioned by Dr. M'Clintock, the narrowing is of such a degree as $2\frac{1}{2}$ inches or 2 inches, craniotomy would be obviously almost certain death to her. Would she not have a better chance of life with Cæsarean section? As good a one almost as a woman who is cut for dropsy of the ovary. I think that in all cases where extreme narrowing exists, Cæsarean section should be an operation of election and not one of *dernier ressort*. I have taught that in my class for years, and if I were to have such a case in my extern maternity, I should bring the woman into hospital, and at once, if permitted, perform Cæsarean section. Where you have a narrowing of the pelvis coming to 2 inches, I say that craniotomy is fraught with so great danger as involving almost certain death to the woman, and in such a case you should have no hesitation in performing Cæsarean section *at once*—you should not procrastinate, but perform the operation the moment her labour sets in. If you do you will doubtless have success. In one case of great narrowing which Dr. Johnston and I have recorded, craniotomy was, after consultation, performed, the parts were lacerated, and immediate death was the result. If Cæsarean section had been performed at once we would probably have saved her life and that of her child. I do not deal at all with the question from a religious point of view. That is not my province. Of course when the child is known to be dead craniotomy may be performed without hesitation, but

it is a terrible thing to have to kill the child in order to save the mother, though such a contingency very rarely occurs. In my opinion, when there exists extreme deformity, your best chance of saving both mother and child is to perform Cæsarean section as soon as labour sets in. It is fortunate, however, that in this country we have so few cases of such deformity. I do not know how long it is since I performed craniotomy, although I have 600 poor people delivered under my care every year. I believe, as I have said, that the reason why we have failed in this country with Cæsarean section is, because we have delayed the operation instead of performing it at once.

DR. KINKEAD (in reply).—In comparing craniotomy with its alternatives I thought I had made it sufficiently clear that I excluded cases of very narrow pelvis. I have not dealt with the question from a religious point of view at all, but simply as a physiologist. We should judge of the operation in the same way as if the lives of two adults were in question, and we had to choose that proceeding which would give us the best assurance of saving the life of at least one of them. I thought I had excluded from the discussion those cases where the size of the pelvis is so great that no danger to the mother is involved in extracting the child by craniotomy. The average size, according to the several standard works, below which it is laid down that craniotomy should be performed, is three inches by one and a half. I have endeavoured to show that the limit below which that operation should be undertaken should be placed higher than that. Dr. MacSwiney has hit off pretty much what I intended to convey when he said that Cæsarean section should be undertaken before the uterine tissues have undergone change from long-continued labour and the mother has become exhausted. My impression had been that Cæsarean section was almost necessarily fatal to the mother, but that impression was altered after I read a paper by Dr. Harris in *The Medical Press*, giving an account of a case in which there was a debate as to what were sufficient signs of the death of the child—failure of the foetal heart, or absence of the placental bruit; and as craniotomy was rejected and no one had the courage to perform Cæsarean section, the woman and her child died. It seems rather a disgrace to our profession that a woman and her child should have been thus left to die. If craniotomy was not performed it is quite plain that Cæsarean section ought to have been. If we investigate the question of mortality in Cæsarean section we find, especially from the writings of Harris, that where it is done early the mortality is infinitely below what is generally supposed to be the case. In fact out of 32 cases that he has collected the mortality was only 25 per cent. Spencer Wells says the mortality, with proper precautions, is only 7 per cent. Collins records 79 cases of craniotomy and 15 deaths; Dunne 10 cases with 5 deaths; and Johnston, in his last report, 28 cases with 7 deaths. If we could

reduce the ratio to anything like that of ovariectomy, it would be our duty to perform Cæsarean section. I had hoped to hear some reasons adduced as to why that operation has been hitherto so fatal, but that, I think, has been overlooked. The question as to whether it would not be less fatal if it were performed in proper time and with proper precautions, instead of hurriedly, without antiseptic precautions and without waiting until the contraction of the uterus had ceased, has not been dealt with in the present discussion.

The Society adjourned.

TUBERCULOUS INFLAMMATION OF THE INTERNAL COAT OF VESSELS IN
TUBERCULAR MENINGITIS.

BESIDES the anatomical changes that take place in the lymphatic spaces and outer coat of the vessels of the pia mater, M. Cornil has demonstrated that the inner coat is the seat of a special pathological process. It is thickened by the formation of several layers of cells which, beginning next the middle coat and going towards the endothelium, present the following form and disposition:—1. Small round cells enclosing small round nuclei. 2. Closely adjoining these are elongated cells of a cylindrical or prismatic shape, and terminated by a filiform extremity which is inserted in the elastic coat. 3. Cells of a large size (giant cells), often flattened out, of the shape of irregular plates, containing two or three ovoid nuclei. 4. Within the zone of giant cells there exist also prismatic cells or small round cells, irregularly placed, and forming a layer immediately subjacent to the endothelium. Thus the cells of the new formation in the inflamed lining membrane form, says M. Cornil, a true evolution, like that of epithelium, ending with giant cells as the highest of the series. The prismatic cells are the same as are found in ordinary inflammation, subacute or chronic, of the internal coat and in syphilitic inflammation of the arteries. This tubercular inflammation ending in giant cells is spread over the surface of the interior of the vessel, and does not affect the form of the limited granulations. The combination of the lesions of the connective tissue of the meninges, of the perivascular spaces, and of the vascular coats constitute the little nodules or the larger tuberculous masses. In several cases of meningitis where he had carefully searched for giant cells, so common in tubercle of other organs, he found them only in the altered inner coat of the vessels. These tuberculous alterations in the inner coat of the vessels strongly support the doctrine of the infection of tubercle, as the blood itself could thus be a carrier of the infective matter.—*Revue Médicale.*

S. W.

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Large Sarcoma of the Face.—DR. BALL said: This tumour occupied the left side of the face of a contractor for nine years before his death. He first came under my notice in the year 1873, when he informed me that the disease had commenced in the shape of a painless swelling in the front of, and a little below, the left ear, three years previously, at which time he was twenty-eight years old. When I first saw him the growth was about the size of a cocoa-nut, extending up to the temporal fossa superiorly, surrounding the angle of the jaw inferiorly; it dilated the antrum of Highmore, protruding also into the cavity of the mouth, and it reached the mastoid process behind. It simulated fluctuation in a marked degree, and on firm pressure over the distended zygoma crepitation could be felt. There was no glandular enlargement. He was free from cachexia, and was in fairly good health, and complained only of the weight of the tumour and the limited motion of the lower jaw. He was most anxious to have it removed, but in consequence of its extensive connexions, I believed operative interference was inadmissible—a view confirmed by Sir James Paget. He was able to follow his occupation until the early part of last year, when the growth increased rapidly in size, and the pain became very severe. He went to London, and put himself under the care of a surgeon, who attempted an operation, the nature of which I cannot tell. The patient, however, described it by saying that they tried to cut the tumour out, but had to stop, as he was bleeding to death. When he came home he was much blanched, and very cachectic. There was a granulating wound of seven inches in length over the greatest convexity of the tumour. It gradually cicatrised, but the tumour continued to enlarge, and the pain was so great as to require the constant use of narcotics, and he had become unable to swallow any solid food. In December several tubercles appeared on the surface, over which the skin had sloughed, and a fungating bleeding mass protruded. He gradually sank, and on the 15th of February in this year death afforded him a happy release from his sufferings. He had not been able to swallow anything for three days before his death. With considerable difficulty I obtained leave to examine the tumour. The brain presented no morbid appearances. At the middle fossa of the skull the tumour protruded through the bone. An incision was made

into the outer side of the orbit, another behind the petrous portion of the temporal bone, and on the lower jaw, the hard palate and the inner wall of the orbit being divided, the whole mass turned out. The entire cavity of the nose was greatly distended, but the orbit was not encroached upon. The mouth contains a large, firm swelling. The lower jaw is deeply embedded in the growth, and the malar bone and zygoma are extended over the surface of the tumour. The crepitation has now disappeared. Both the history and the dissection of the specimen showed that the tumour originated in the lower jaw, for if we dissect the mass away from the portion which remains, we find a cavity existing in the lower jaw, from the walls of which spicula of bone protrude in various directions in the structure of the tumour, the thick and alveolar process being absent. With regard to the histiology of the growth, a large mass of it was, when the section was made in the fresh state, almost diffuent; it was the colour of a liver, and the finger could be easily passed through it, so soft was its structure. On the surface a large cavity remains, in which a slough existed, about the size of a hen's egg, when the *post mortem* was made. You can also see tubercles which protruded through the skin. This portion of the tumour appears to be of a round-celled, sarcomatous character, the cells being of small size. The portion occupying the cavity of the mouth is white and tough. A microscopic examination has revealed the presence of a large number of spindle cells. The tumour weighed nearly seven pounds when it was removed. There was no glandular enlargement.—*December 13, 1879.*

Intussusception of Ileum into the Colon.—DR. WALTER SMITH said: This specimen represents a condition not very common in the adult—namely, intussusception of the ileum into the colon. I give the case from notes taken by Mr. Lewis:—

A young man, aged thirty-three, who had previously enjoyed good health, was admitted into the Adelaide Hospital on 7th July last, complaining of abdominal pain. Last January he had got a rheumatic attack which affected several of the large joints of the body. He got well and remained so until the 25th of March, when, at four o'clock in the morning, he was seized with a severe spasm in his abdomen, which was followed by vomiting. He stayed at home that day, and on the next day returned to his work. After this he had to give up his business and was almost entirely confined to his bed, and was never long free from painful spasms. Dr. Reuben Harvey and Dr. Auchinleck saw him, and he was then feverish and passing slimy material from his bowels, and appeared to be suffering from inflammatory mischief in the neighbourhood of the right iliac fossa. The pain was not increased by food and did not occur at night, and he could not account for it in any way as he had sustained no injury, and had not caught cold, or taken anything that

disagreed with him. He had lost a considerable amount of flesh, and when he first came into hospital the pain was increased by the action of his bowels. When he was admitted he chiefly complained of persistent abdominal pain, which was most severe towards the epigastrium, and sometimes radiated all over the abdomen. Gentle pressure caused no pain, but the muscles were found to be rigid and firm, especially on the side of the left iliac fossa. The right iliac fossa was flaccid. In the left iliac fossa was an obscure cylindrical swelling. There were no cardiac signs. The urine was free from albumen, and was rich in indigogenous material. A few days later I examined him *per rectum*, and found, three inches from the anus, a soft nodular mass round which the finger could be swept. Vomiting returned with increased severity, and he was obliged to get hypodermics of morphia. He complained of great thirst, but vomited in a few minutes after drinking, and was greatly annoyed by a sharp metallic hiccup. His pulse ran up to 140. He could take a little coffee better than milk, which was immediately rejected. His bowels were moved almost every day, and he passed a slimy material which was latterly streaked with blood. Then he had an interval nearly free from pain, and his bowels were moved, but the vomiting returned. Two or three days later, at every motion of his bowels, the intestine protruded at the anus. On the 19th of July he became much worse, and slight delirium set in. The bowel came down with every attempt at straining. The substance evacuated was like the matter he vomited—foetid, yellowish in colour, and very thin. He became drowsy, cold at the extremities, and ground his teeth; his pulse failed, and he gradually sank and died, in the middle of the day, on Sunday, the 20th of July, a fortnight after his admission.

On a *post mortem* examination the peritoneum was found to be vividly injected in patches, and there were narrow red stripes of very bright vascularity, but no adhesions between the intestinal coils. On slitting up the intestines a deep patchy injection was found. In the right lumbar region the peritoneum was of a dark slate-blue colour, and there were a few bands of lymph, but no constricting cords. There was intense venous congestion. The small intestines were very moderately distended; there was scarcely any mesenteric fat; the mesenteric glands were large and succulent, and the duodenum was adherent to the liver and gall-bladder. Following out the course of the intestines an intussusception was discovered, which was found to consist of an invagination of the ileum into the ascending colon, forming a cylindrical mass eight or nine inches in length. The outer tube was not much congested, and the serous surfaces were adherent only at the upper part of the intussusception. The central tube was of a deep maroon-purple colour. The inferior opening of the intestine was lateral, owing to the traction of the mesentery, but the tube was readily pervious to a large bougie.

The opening was about two and a half inches from the lower end of the intussusception. The rectum and the remainder of the colon were contracted, contained little or no fæces, and on the internal surface one oval patch of erosion was observed. The small intestines, on being more carefully examined, exhibited several honey-combed patches of old ulceration in the neighbourhood of the intussusception. I could not make out the vermiform appendix, nor even the position of the cæcum. There was no evidence of any tumour or new growth in any part of the bowel. There was nothing worthy of note in the thorax. From the first appearance of the symptoms until the young man's death was an interval of nearly four months.

The diagnosis during life of intussusception was based chiefly on the history of the case, the existence of the left iliac tumour, the occurrence of mucus streaked with blood in the motions, and on the results of rectal examination. I think the specimen is worthy of notice—first, on account of the comparative rarity of such an event in the adult; next, on account of its occurring independently of any growth in the wall of the bowel—with which it is said to be most commonly associated in adults; and thirdly, because I think the condition of the parts shows that it would have been quite hopeless to have attempted any operative procedure for the relief of this patient. The intussusception could not be disentangled after death. As to what the course of events was I am not quite clear, but I am disposed to think that what occurred was this—ulceration first occurred, in consequence of which local paralysis, or paresis, of the intestine resulted, and in consequence of this the intussusception took place and went on slowly increasing. There is at least one very well authenticated case in which the duration of the intussusception was estimated at eleven months, and there are more doubtful cases of three or four years' duration. It is possible, of course, that the order of events might have been otherwise, and that the first event in the case was the intussusception, and that the intestinal ulcers were afterwards set up by inflammation consequent on the invagination of the intestine.

DR. FINNY remarked that when the position of the swelling was so much on the right side of the abdomen it must have been rather difficult to feel it through the rectum.

DR. WALTER SMITH said the colon was simply displaced on the left side of the pelvis; the remainder of the large intestine was foreshortened, and the tumour presented itself on the left side of the sacrum. There had been many cases in which the ileo-cæcal valve had been dragged over from its normal position and had even protruded through the anus.—
December 20, 1879.

Dentigerous Tumour of Inferior Maxilla.—MR. STOKES said: This is an example of a disease not very frequently met with in the situation in-

which we found it—namely, a dentigerous or membranous cystic growth, one which occurs more frequently in the upper than the lower jaw. The patient who suffered from the growth is a young lad aged fifteen years, who was admitted into the Richmond Hospital under my care on the 19th of last month. He stated that twelve months ago he suffered very acutely from toothache, and consulted a dental practitioner, who advised him to have the tooth, which was affected with carious disease, removed. An attempt was made to remove it, but the operation was not attended with success. Shortly after this the patient observed an enlargement of the lower jaw; this went on increasing in size until it reached the dimensions it had on his admission into hospital. The boy suffered no pain or inconvenience from it, nor did it interfere with the motion of his jaw, the only trouble being the deformity, which was so very great that he and his parents were anxious to have it removed. On making an examination, I found the soft parts over the tumour perfectly normal, but the tumour itself was externally extremely hard and smooth, while with respect to the inner surface of it, on opening the mouth, we found that one spot was particularly soft and yielded to pressure with a crepitating sort of sensation. All the rest of the tumour was perfectly dense and hard. Two or three days after I examined him, and after you, Mr. President, had an opportunity of examining him, an opening occurred close to the situation where the diseased tooth had been, and through this a small amount of clear, honey-like fluid of a pale yellow sherry colour exuded. Having regard to the history of the case, the appearance of the tumour and the condition of the surface of it, both externally and internally, I came to the conclusion that it was in all probability essentially a benign tumour. We had the advantage of the President's advice as to the best means of dealing with the case, and as to whether it would be possible to remove it without an external incision, or that the portion of the jaw in which the tumour occurred should be removed. After careful consideration I determined that the latter course was the only one that afforded any prospect of relieving the boy from the deformity he suffered from, for I observed that there was an obvious expansion of bone in every direction—in fact, it was as much enlarged externally as it was internally, and had I opened the cyst from the inside I should only have evacuated its contents, and then I should have had to adopt measures to destroy the cyst, such as the introduction of some irritating substance, but still the external deformity would have remained. Consequently I determined to excise the portion of bone in which the tumour was, and I did so. Small as the tumour was, the removal of it was accompanied with considerable difficulty—much more than attended the removal of the very large submaxillary tumour that I exhibited to the Society at the last meeting. It was, however, successfully removed, and the case subsequently did remarkably well. The wound united

without a trace of suppuration—in fact, the union was immediate, and the boy has returned home perfectly well. With reference to the operation, the only thing worthy of mention is the importance of making the incision far back and downwards, so as to bring the cicatrix as much underneath the jaw as possible. This we did. It does not in the slightest degree interfere with the convenience of the operation, while it helps to conceal the fact of the operation having been performed. With reference to the mode of formation of these growths, there can be very little doubt that in this case it was due to the irritation of the carious tooth, and not to the existence of a misdirected tooth, or to a tooth that had been too deeply sunk in the body of the bone, or that had been arrested in its development before it reached the surface. These, according to Mr. Tomes, are the chief causes of these dentigerous or membranous maxillary cysts, although it is a form of disease much more frequently observed in the upper than in the lower maxilla. On a section of the tumour we observed that it is lined with a very thick, tough, leathery membrane, easily peeled off. This secreted the mellicerous fluid to which I have drawn attention. The walls of the cyst are of irregular thickness, being in some places very thin. The thin part is where we felt the soft point on examining the tumour from without. On account of the rarity of the occurrence of this disease in the lower jaw, I think the tumour is worthy of the consideration of the Society, as it is a remarkably good example of a single cyst tumour, and has been probably the result of the irritation of the carious tooth from which the lad suffered a year previously. As to the mode of origin of the tumour, Mr. Tomes held that these cysts were usually produced in this way:—A fluid effusion occurred between the enamel of the teeth and the surrounding soft parts, which was increased in quantity by any irritation that ensued, and the fluid thus increasing in quantity expanded the bone in every direction, and in that way the tumour was formed. Whether the irritation was produced by disease or by the malposition or mal-direction of the teeth, the result would be the same.—*December 20, 1879.*

Thoracic Aneurism.—DR. FOOT laid before the Society a fine specimen of aneurism of the thoracic aorta, but one which was not remarkable during life for conspicuous signs or symptoms. The man from whom the heart and lungs exhibited had been taken was a soldier, forty-six years of age. He had been for thirty-six days in the Meath Hospital in the summer of 1879, and his (Dr. Foot's) colleague, Dr. J. W. Moore, had no difficulty in coming to the conclusion the man had thoracic aneurism. At that time the man complained of sensations of pressure and oppression within the chest, while there was a distinct area of dulness over the left central region of the front of the chest. There was no murmur audible over the sac, but the heart sounds were very distinctly heard

thereabouts. The man took large doses of iodide of potassium the greater portion of the time he was under observation. He disappeared from view until the present week, when he was admitted late one evening in a state of great distress from urgent dyspnoea, partly due to recent bronchitis, and partly to aneurismal pressure, judging from the amount of stridor in his respiration. He endured this attack for thirty hours, and died from exhaustion and insufficient aeration of the blood. The body, which was examined nine hours after death, was that of a robust, muscular man; there was obvious distension of the veins about the sides and front of the neck. Lying behind the sternum, but not adherent to it, was the sac of the aneurism, which separated widely the free anterior margins of the lungs, especially displacing the left, and pushing the heart downwards, and to the left side. The aneurism involved the thoracic aorta from its origin to the giving-off of the left subclavian artery. The remainder of the thoracic aorta presented the atheromatous change in an eminent degree. This portion of the vessel having been slit up as far as the distal limits of the aneurism—that is, as far as the origin of the left subclavian artery—eleven ounces of blood, partly fluid and partly clotted, were pressed out of the sac, which, after several washings, was filled with melted paraffin, whereby the original form and dimensions of the sac were somewhat preserved. Dr. Foot did not think the size of the sac was exaggerated by this proceeding, because the eccentric pressure of the blood during life was not represented, and because the paraffin, as it contracted during cooling, did not even completely fill the sac. On viewing the windpipe from behind, when its membranous wall was slit open, it was plain that the posterior wall of the aneurism impinged forcibly upon the rings of the trachea, just at its point of bifurcation.—*January 10, 1880.*

Disease of the Hip-joint.—DR. BARTON said: This specimen is a portion of the upper extremity of the femur, which I excised this morning. It illustrates the pathology of affections of the kind, to which I am about to refer, in a different aspect from that which I lately brought under the notice of the Society. The case was that of a girl, aged thirteen, who had had hip-disease for two years. During nine months of that time she had been confined to bed, and she was brought to the hospital two months since in a very emaciated condition, with a large abscess outside her hip-joint, which had been operated on in the country by the introduction of a drainage tube, and the abscess was also discharging freely on the inner aspect of the thigh. She had bed-sores and was in a very low general state. On consultation with my colleagues the question which arose was whether we could save the girl's life by the excision or amputation of the hip. This morning I performed excision, believing the shaft of the femur to be in such a state that the operation could be

done with some prospect of success. On making an incision and laying open the part freely, I found that what had been the head of the bone was drawn into the acetabulum, and could not be turned out without force, and that some degree of ankylosis had taken place. Below the trochanter the bone was evidently in a carious condition. The centre of the disease is a carious and necrosed portion of the bone, which is easily separated from the inner and posterior aspect of the trochanter. On raising the head of the bone out of the acetabulum I found that the cartilage had been entirely removed, and that a considerable amount of adhesion had taken place between that and the acetabulum. On introducing my finger into the acetabulum I found that there was a hole extending from it to the pelvis. No sign of an abscess or matter existed, but there was evidently a perforation, and it appeared as if the innominate bone had been divided into its three original bones. The finger, on being passed through the opening, went in about a quarter of an inch, but was stopped by a firm membrane. It appeared that there was no active disease going on there, and that this remaining part of the head of the bone had plugged up the opening. It is evident that the active part of the disease which was running down the child existed in the lines of the epiphysis and the cancellated structures of the trochanter. I removed a second piece of the femur in order to come down on a more healthy portion of the bone, so as to secure a healthy condition of the periosteum. The second ring of the bone was removed, and the portion you see has been taken off. The limb had already been shortened three-quarters of an inch by the absorption of the head of the bone and its passing up into the acetabulum. A specimen which I laid before the Society some time ago differed in a marked manner from this one. In it the head of the bone was rather larger than usual, and was covered by its cartilages, which had not undergone absorption, but towards the bone it was loose, and there absorption was commencing. But in that case also, although it differed in so marked a respect from this one, the line of the epiphysis was essentially the commencement of the disease. I think that in this case the disease commenced in the same way, and extended to the joint and caused ulceration of the cartilage; but there the process of cure had gone on to a considerable extent—union had taken place to a certain extent after the destruction of the cartilages, but in the old region where the disease commenced no reparative action had taken place. Extensive suppuration ensued, threatening the life of the patient from exhaustion.—*January 10, 1880.*

The Etiology of Pulmonary Gangrene.—DR. WALTER SMITH said: Gangrene of the lung is a sufficiently rare condition to deserve exhibition. It is especially uncommon in children, at least according to the experience of Dr. West, who up to 1848 had met with only one case, and even Messrs.

Rilliet and Barthez in their unrivalled clinical experience have met with only eleven cases of it. The interest of the present case lies in the mode of origin of the disease, which the specimen bears out—namely, a primary gangrenous process in the bronchial glands which corroded the bronchus, and set up a secondary gangrene in the lung. The patient, a little girl aged five years, was admitted into the Adelaide Hospital from the Elliott Home. She was only two days in the hospital and quickly sank. The day before she died I was asked to see her, and her condition was then as follows:—She was sitting upright in bed, unable to lie down, and in a state of extreme dyspnoea, her respiration being 80 per minute. Her face was of a livid leaden hue, and her condition one of stupor and heaviness, so that she seemed to be scarcely conscious of being spoken to. She was so ill that I found it impossible to make a detailed examination, but I ascertained that the bases of both lungs were dull, that she had tubular breathing and muco-crepitant râles. Her breath was horribly foetid, but the foetor was worst on the day of her admission, and lessened before she died. She died in the forenoon of the 5th of January, and I made a *post mortem* examination on the same day. On examining the abdomen I found no fluid in the peritoneum, but in it and other places was found evidence of extensively diffused miliary tuberculosis. The spleen was thickly studded over with yellow nodules, and a section of it showed tubercles all through its substance; there were a few on the surface of the kidneys, and two or three could be seen at the junction of the cortex and the medullary substance. There were about a dozen tubercles in each kidney. The whole of the upper surface of the liver was thickly studded over with miliary nodules, and recent adhesions afforded evidence of a good deal of fibrinous peritonitis. There were also tubercles in the lesser omentum. The mesenteric glands were very much enlarged, soft, gray, and homogeneous throughout. On coming to the thorax no fluid was seen in the pleural or pericardial cavities, and no trace of pericarditis existed. There were recent adhesions at the base of the right lung and between the lobes of the lung. Both lungs were studded on the surface with a considerable number of gray, firm miliary tubercles, especially on the surfaces between the lobes of the lung. Both lungs were consolidated, but the left not to such an extent as the right. There were numerous nodules of different sizes, from that of a small pin's head to that of a split pea, and in different stages, some firm and gray, some caseous, and most of them surrounded by a small area of pneumonic consolidation. The right lung was considerably more voluminous than the left, and its state of induration from pneumonic consolidation was more marked than on the left side. There was no cavity whatever in the lung, nor any bronchial dilatation, which during life we suspected might be the cause of the foetor of the breath; but there was no excavation of the lung substance, with the exception of that to which

I shall presently advert. On removing the lungs a ragged cavity was exposed at the back of the trachea, the foetor from which was then almost unbearable, but it has since disappeared under the influence of preservation in chloral. It was a sloughing cavity at the root of the trachea, and was full of rotten, gangrenous, and ragged *débris*. No mischief had occurred to the trachea itself. The œsophagus was healthy and also the aorta, and there was no evidence of any gangrenous process in the left lung. The left bronchus and finer tubes leading to the left lung were perfectly healthy. About half an inch from the bronchial septum was an irregular oval opening in the right bronchus, and at the root of the right lung there was a small gangrenous cavity in a condition of horribly foetid slough. Round this was a gray firm zone. The retro-tracheal glands were enormously enlarged, pigmented with yellow, and some of them at the margins exhibited distinct isolated nodules. I am not in possession of the early history of the child, and know nothing of her antecedents. The convolutions of the brain were flattened, and the subarachnoid spaces contained some turbid fluid, and there was a large development of tubercles on the convexity of the brain, but the most careful examination by the naked eye failed to detect any in the base of the brain. The ventricles were distended with turbid fluid, and there were numerous cysts in the choroid plexus. I believe that the gangrene of the lung supervened upon that of the bronchial glands. The way in which it probably happened was this:—The child when younger had possibly some such affection as measles or whooping cough, and as a consequence of these got scrofulous enlargement of the bronchial glands. This ultimately set up the diffuse miliary tuberculosis. Probably before the commencement of her last illness the child got some acute chest attack, during the progress of which the bronchial glands suppurated and broke down, bursting into the right bronchus. The result was that gangrene supervened, and some particles of the gangrenous matter were sucked into the right lung, and produced the gangrenous state in the root of the lung. In the fourth volume of Ziemssen's *Cyclopædia* there is an account of a primary destructive necrotic process in the bronchial lymphatic glands which is considered to be very rare. After having examined the case I have just laid before the Society, I saw a paper by Dr. Gee, of London, one of the cases given in which closely corresponds to the present case.—*January 10, 1880.*

Hip-joint Disease.—DR. E. H. BENNETT said: This is a very remarkable specimen of a very common disease—namely, hip-joint disease. The point of interest in the case during life was that, although hip-disease was suspected in the child, the usual and familiar signs of that disease were absolutely wanting. The case was that of a little boy of two and a half years old, who was brought to Sir Patrick Dun's Hospital by some

of his relatives. He was emaciated to the last degree, being absolutely skin and bone. All round the left hip was an abscess, the size of which nearly equalled that of the child himself—in fact, the case was more an abscess with a child than a child with an abscess. The boy was deposited on a bed, and since that I have not learned any fact of his history. His relatives and friends absolutely abandoned him to the chances of hospital existence. The condition of the child was then such that active surgical interference was not at all promising; still the size of the abscess was such, and the skin over it was so thin, showing the purulent matter through it, that it seemed about to burst. I therefore thought it better to allow the matter to escape under antiseptic precautions than to let the abscess burst of itself. Accordingly, I made a guarded opening into the abscess, avoiding as well as I could blood-vessels which crossed it in front where the skin was thinnest, and which were excessively large from the fact that the iliac vein had apparently undergone occlusion from some cause or other. The whole limb had the condition of what is known as milk-leg. The large veins in the abdomen showed the obstruction of the iliac vein. I knew that if the child lost a few drops of blood he would die, and therefore I avoided making a lengthened incision. The case afterwards ran an unusually favourable course for a time. About a pint and a half of matter escaped, and considering that the child was extremely small and emaciated, and without muscle or anything almost except skin and bone, it was astonishing how such an amount of matter should have escaped without its dying; but it struggled on from about the end of November, when it was admitted, until two or three days ago, when it died. After the abscess had been opened and the tension relieved the child recovered itself so far as to take food, and at one time we thought that it might recover. After a while the abscess closed, but in two or three days afterwards, as the child lay in bed, we discovered that it had reopened and began to discharge blood. At this time he had a bed-sore on the sacrum, and his general condition was clearly not improving, because as it lay on its side in bed the dependent part of the face became cedematous, showing a failure in the circulation. The point of interest in the case—and perhaps the only thing we have to speak of here—is that, no matter in what position the child was put, no symptom of hip-disease appeared, beyond the fact of the abscess round the hip. We had no reason for supposing that there was disease of the spine, because, although on pressure of the iliac fossa with the hand matter could be made to escape, there was no abscess extending up along the spine. We could move the hip-joint on the diseased side with the greatest readiness, more even than the sound hip. It did not give the child pain to do this. It disliked any movement, but it did not resent movement of the diseased limb more than of the sound one. Although I diagnosed the case as one of hip-joint disease, as it was, by way of

exclusion, the only cause for so large an abscess being localised at the hip, I had no reason for this supposition beyond the fact that the abscess lay around the hip-joint. On a *post mortem* I found the condition of affairs very interesting as bearing on the point of excision of the hip. It was a hip-joint in which nature had absolutely excised the upper end of the bone, and the reparative process was complete as far as the femur was concerned, except that in the hip-joint the osseous nucleus of the epiphysis was retained. The surface of the acetabulum was free from caries, and was covered over with a complete and perfect membrane without trace of perforation into the pelvis. In the place of the joint there was a great cavity caused by the abscess, and in it lay a little morsel of necrosed bone, which is the epiphysary centre from which the cartilage was dissolved. Had we been able to diagnose this condition of affairs, or had we been fortunate enough to have made an incision in the posterior aspect of the joint sufficiently large to allow of the escape of this, the case might under conditions otherwise favourable have been completely cured. There was no disease of the femur, no disease of the pelvis, nothing but the abscess and the piece of detached bone as a permanent source of irritation. What length the disease lasted or how it originated, I do not know. The case is the only one I know in which the disease was strictly limited to the exfoliated piece of bone.—*January 10, 1880.*

Granular Kidney ; Pernicious Anæmia.—DR. WALTER SMITH said: These specimens which I removed this morning possess some interest, chiefly in reference to the question of the diagnosis of pernicious anæmia during life. Whether that diagnosis be admitted in the case or not, the specimens are not devoid of pathological interest in several respects. Dr. Head, under whose care the man was, kindly gave me an opportunity of seeing him before his death. He was a gardener, aged fifty-five, a tall, well-built, robust man, and was admitted into the Adelaide Hospital on the 30th of November. He had lived in a swampy district in the county of Cavan, his mode of living was temperate and well regulated, and he used plain, wholesome food, although chiefly farinaceous. He had no hereditary disease, his father and mother having been healthy. He was constitutionally strong, and capable of considerable physical exertion, although eight years ago he suffered from a hernia, for which he had to wear a truss. In March last he was attacked with pain over the epigastrium, followed by nausea; six months after that attack he was prostrated by diarrhœa, which continued for ten days, and was accompanied by fits of vomiting, and throwing up of bilious fluid. He complained of pain felt on pressure near the pyloric end of the stomach. There was a slight apparent induration at that point, but it was difficult to make a satisfactory examination on account of the spasmodic rigidity

of the muscles. The vomiting did not come on at any certain period. He was able to take solid food, but rejected liquids, and particularly stimulants, almost immediately. He slept well and suffered no pain. The action of his heart was slow and feeble. Well-marked venous murmurs were heard in the neck. His pulse was 60, his temperature normal, and his urine acid, amber-coloured, and free from bile and albumen, and no tube-casts could be detected. His face was pallid, and of a dull, opaque, white colour; his tongue white and furred; and his muscles flabby, but not much wasted. There is little to say about the further progress of the case in hospital beyond this, that his strength gradually failed. On the 13th of January some blood was taken from his finger and put under the microscope, when it was found that the appearances it presented were in all respects similar to those figured by Dr. Finny in his recently published lecture in *The British Medical Journal*. The blood was also examined to-day by Dr. Purser and myself, and substantially the same appearances were found. Two or three days before his death he became childish in manner; and when he wanted anything, whined and whimpered until he got it. From this he passed into a state of unconsciousness, and died quietly on the 16th. I made a *post mortem* examination this morning, twenty-three hours after his death, and during part of it had the advantage of Dr. Purser's assistance. The body was extremely pallid, and differed remarkably little in aspect from what it was during life. There was very slight lividity, no ecchymosis, and rigor mortis was well marked. On removing the calvaria, the skull-cap was found to be extremely dense, and the Pacchionian depression was deep and well marked. The dura mater was thickened, adherent to the bone, and perfectly opaque. The arachnoid on the convexity of the brain was lifted up by gelatinous exudations; the surface of the brain was extremely pale, the convolutions appeared to be atrophied, and the sulci deep and well marked. The vessels at the base of the brain were not rigid. Nothing remarkable was found on section of the principal ganglia at the base of the brain. The roof of each of the orbits was removed, and the globes of the eyes taken out. One of them was cut across transversely, and exhibited to the naked eye a multitude of small hæmorrhages scattered over the whole fundus of the eye. The region of the yellow spot was opaque. A section of the other eye exhibited the same appearances in a still more conspicuous degree. The superficial abdominal fat was found to be moderately developed, being about a third of an inch in thickness. There was no fluid in the peritoneum, nor any sign of inflammatory action; nor was there any sign of inflammatory products in the pleura, save some old adhesions with a few ounces of amber-coloured fluid. The heart was enlarged, and weighed fifteen ounces; the right auricle of the heart was nearly empty. The right ventricle was collapsed, and an incision being made into the right auricle,

half an ounce of fluid black blood escaped, which did not coagulate after standing for an hour and a half. The left ventricle was enormously disproportionate in thickness, being fully five times as thick as the right. On a close inspection of the inner surface of the cavities of the heart and *musculi papillares*, there was an appearance, which you can see still, of white mottling, indicative of fatty degeneration, on the endocardium. There were some slight thickenings about the valves, and a few patches of atheromatous and fatty degeneration in the aorta, which was, however, elastic. The muscular tissue of the heart, as far as I could judge by the eye and touch, was firm, and free from any degeneration. The lungs did not collapse; the left one was very voluminous, and its upper lobe was emphysematous; the lower lobe was in a state of congestion, and extremely œdematous. The chief complaint the man made in the early stages of his history was shortness of breath. There was no other change in the lungs. The bronchial glands were enlarged and deeply pigmented. The spleen weighed $8\frac{1}{4}$ ounces, and its capsule was thickened in some places, but the splenic tissue was remarkably firm and hard. The right kidney weighed $5\frac{3}{4}$ ounces; its capsule was thickened, and somewhat adhered to the surface of the gland, which was distinctly nodulated. Cysts are extremely numerous in it, and on section the cortical portion was thinner than normal. No evidence of amyloid change. The left kidney weighed only $4\frac{1}{2}$ ounces, and was still more markedly granular on its surface than the right. The cortex was dark-red, and was atrophied in parts. The cysts on the surface and the other conditions point to cirrhosis of the kidney. The liver presented no noteworthy appearance beyond the fact that it was tougher than usual. In other words, there was a general fibroid change throughout the organs of the body; the mesenteric glands were enlarged; the bile-duct was pervious. The blood presents the characters which are described in connexion with pernicious anæmia, the corpuscles being some large, others small, and others misshapen. I removed a bit of one of the ribs, and a portion of the shaft of the femur. The appearances presented on a section of the femur were remarkable, and the medulla presented no trace whatever of the yellow marrow, the cavity being filled with a soft red pulp, the colour of which now is not different from what it was when the bone was freshly removed. A little of it was placed under the microscope, and an imperfect examination was made with insufficient light. There were few or no adipose cells to be seen, and the whole of the red marrow seemed to be made up of numerous lymphoid cells, very regular in size, coarsely granular, and distinctly nucleated; and I saw some large corpuscle-holding cells. The question this case raises is as to the existence of such an affection as pernicious anæmia. His urine, when examined on several occasions, was found to be free from albumen. He had slight œdema of the hands and legs, but not more than is observed in cases of extreme

anæmia. The man had been sent to us as a case of carcinoma of the liver or stomach. It is now seen that the kidneys are in a state of degeneration, and it becomes a question how far the anæmia was connected with that state, or whether the patient laboured under two independent affections at the same time—viz., cirrhosis of the kidneys and idiopathic pernicious anæmia.

DR. FOOT observed that if he had been told nothing of the history of the case, but had merely seen the kidneys in their present condition, the hypertrophied heart, and the retinal hæmorrhages, he would have come to the conclusion that the man had suffered from Bright's disease of the kidneys, even if he had not heard that he was fifty-five years of age, and had œdema of the extremities. The absence of albumen in the urine did not astonish him, as it was well known that its appearance in the most confirmed cases of granular kidney is intermittent, and often eludes all but the most patient and minute investigations.

DR. PURSER thought the case one of Bright's disease, with consequent anæmia. The condition of the blood and of the medulla of the long bones had been met with in anæmic conditions due to various causes. When, as in the present instance, a sufficient cause for the anæmia was found in the condition of the kidney, it was not necessary to assume an unexplained condition such as that generally understood by progressive or essential anæmia.

DR. FINNY said :—It has been my good fortune to have seen a few cases of idiopathic anæmia. I have seen three certainly; and I have had the better fortune to have had two recoveries. I have not, however, before this, had the advantage of witnessing the *post mortem* appearances of such disease. It would be too much to assume, as has been assumed by some of the members, that *every* case of pernicious anæmia is idiopathic, and has not been produced by some of the recognised organic changes in the kidneys and other parts of the body; for it is certainly the fact that in several fatal cases of anæmia the *post mortem* revelations have not shown sufficient disease of the kidneys, or a sufficient amount of bad nutrition to account for the pernicious anæmia. If all the persons affected were poor, the view of malnutrition might, perhaps, be supported. But the disease is one which attacks not only the poor, but those who are well-to-do, and can look after themselves; and such persons have died of it, and their bodies, after death, have been found free from all such pathological changes in the kidneys, the spleen, or lymphatics, as are recognised to be capable of producing anæmia, and who have suffered neither from phthisis nor cancer. I look on the case before us as one of idiopathic anæmia. I think the diseased kidneys were only an accidental concomitant of the other disease. The kidneys are by no means in such an advanced stage of degeneration as might be expected to be present were the anæmia due to such a cause, nor did the symptoms point to

advanced morbus Brightii. I do not lay much stress on the hæmorrhages in the retina, which are due to the altered condition of the blood, and which are so commonly found in idiopathic anæmia. The investigation of the condition of the marrow is an important matter, as by some, including Dr. Purser, the changes in the marrow are considered a direct cause of this peculiar anæmia, and should be referred to a committee, who should also try to what extent iron exists in the tissues. It has been found by Quincke and Purser that in cases of idiopathic anæmia there has been an excess of iron in the liver, kidneys, and pancreas. One kidney in the present case shows extreme anæmia in the cortex, and the other considerable colour, and I think it would be worth inquiry whether that is due to pigment or to simple congestion, and it might be referred also for investigation to the committee. The condition of the heart is, I think, to be explained entirely by the anæmia, of which it is a consequence, and is not to be looked on as the cause of the anæmia. Nor do I look on this condition of the heart as an absolutely necessary consequence of the disease in question. There are cases of idiopathic anæmia on record in which there was no fatty disease of the heart. The view put forward by Dr. Purser to-day (differing from the view he published in 1878) as to the marrow is, I believe, the correct explanation of the relation it bears to the anæmia—viz., that it is the result, and not the cause, of the anæmia. It is one in which I entirely agree, and one which I have already expressed in my paper on "Idiopathic Anæmia," in *The British Medical Journal*, January 8th, 1880. I think the specimens a very good example of those found in idiopathic anæmia. It may be wrong to shelter one's self under a name which expresses less the pathology than the symptoms and absence of causation, but I feel convinced there is such a distinct disease possessed of distinct pathological characters, although we have not yet arrived at the true causation of it. It must, I assert, exist as an independent disease, or else all cases with fatal anæmia must present structural changes of the kidneys or other organs, or all such cases of diseased organs should present a like fatal anæmia—alternatives which, we know, do not obtain.

DR. WALTER SMITH, in reply, said that the mode of death of this man was quite different from any of those modes of death with which they were familiar as occurring in cases of chronic renal disease.—*January 17, 1880.*

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1879-80.

President—PROFESSOR DILL, M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

Tuesday, January 13, 1880.

PROFESSOR DILL, President, in the Chair.

Exhibition of Specimens.

DR. J. W. BROWNE showed a spongy exostosis which he removed from the ungual phalanx of the great toe of a healthy man who had suffered from it for two years the most distressing agony.

He exhibited a diseased larynx removed after death from a patient upon whom he had performed the operation of tracheotomy. He did not believe that the ulceration was syphilitic or tubercular. There was extensive congestion of one lung and a clot in the pulmonary artery.

He exhibited, also, a bladder from a patient which he tapped per rectum. The case was a very interesting one. The patient was a subject of the hæmorrhagic diathesis. There had been a narrow stricture of the urethra, and before he came under Dr. Browne's care an extensive false passage had been made, tunnelling through the prostate on the right side and entering the bladder; from this opening blood was oozing, but on account of the high pressure within, owing to the distended bladder, the bleeding was prevented, and when he tapped for complete retention this pressure was removed, and the consequence was the bladder filled with large clots of blood. He detailed how he attempted to get rid of these. He injected pepsine and dilute muriatic acid with a view of digesting and breaking up the clots, as recommended by Dr. Foot, of the Meath Hospital. The man sank from uræmic poisoning. A very interesting and unusual point in the case was, as the specimen showed, the remarkable malposition of the ureter—one opened in the middle line at the apex of the trigone. His incision, as they would see, just perforated the bladder in the right spot. He could not say how or by whom the false passage was formed.

He next showed a cyst, semi-solid, which had been removed from a patient; and he gave the following history:—The woman had been tapped twice outside hospital, and the fluid collected rapidly. Finally she consented to have it removed; and he made the usual incision upon

Sunday last, and found such universal adhesions and such thorough continuity of tissue as he had never seen before. He related all the difficulties as they presented themselves, and how he met them. The cyst which he showed was from the interior of the large one. He removed it to gain room, after taking away all the cyst wall possible and the fluid. He concluded the operation, which was performed under the spray, by putting in the usual sutures and a glass drainage tube designed by Keith; and he here stated that this latter appliance he never would use again, as in removing the dressing next day he found that the glass flange had broken off, though fortunately the glass did not slip inside the abdomen. The patient did well for nearly twenty-four hours, when she suddenly commenced to sink, and died very soon, apparently from shock.

DR. BROWNE next showed a beautiful specimen of compound comminuted fracture of the forearm, extending through the elbow, and showing the T-shaped fracture as described by the late Mr. Adams of Dublin. The limb required instant removal.

DR. WHITLA had examined the specimen of diseased larynx, and he quite agreed with Dr. Browne about its origin; and he was firmly convinced of the fact omitted in nearly all the text books—that true chronic inflammation of the larynx could and does often occur, ending in ulceration, and having neither syphilitic nor tubercular origin. He described the character of the ulceration met with in ordinary chronic bronchitis of long standing causing death, and he believed it was precisely the same state of matters in the larynx. He could recall, in his short experience, three cases where neither a tubercular nor a syphilitic nor a cancerous origin existed. He had tapped the ovarian patient outside hospital, and seen her tapped in the hospital, and he had examined the inner cyst then, and failed to get from it any fluid by inserting the trocar further in. It was, however, evident what it was through the relaxed abdominal walls.

DR. WHEELER commented upon the interest of the specimens exhibited by Dr. Browne. He thought Dr. Browne could not possibly have done anything else than operate in the ovarian case. If a man only selected such cases as must succeed, and avoided all doubtful ones, his power for good was very limited.

DR. WITHERS detailed a case where two exploratory operations had been made and the patient recovered, the capital operation being abandoned.

DR. KEVIN detailed a very interesting case bearing upon the bladder specimen, where the organ was tapped three times in twenty-four hours.

DR. O'NEILL spoke of the careful and dexterous way in which he witnessed the ovariectomy performed by Dr. Browne. The adhesions could not have been previously foreseen.

PROFESSOR DILL commented upon the care required in the selection of

cases of ovarian disease before operation, strongly recommending the exploratory tapping before operating as the best guide to diagnosis. He pointed out the great advantage in operating at the Throne Hospital and not in the Royal.

Tuesday, February 9, 1880.

PROFESSOR DILL, President, in the Chair.

Remarks on Colles' Fracture and its Treatment with Professor Gordon's Splint.

By HENRY O'NEILL, M.D., M.Ch.; Assistant Surgeon, Belfast Royal Hospital.

FRACTURES at the lower end of the radius are of great practical importance, from their frequency and the evil consequences arising from the common methods of treatment still recommended in most surgical works. There are two chief forms. The first form is usually called Colles' Fracture, so named from having been accurately described by Dr. Colles, Dublin, in *The Edinburgh Medical and Surgical Journal* for 1814, Vol. X., pp. 182-186, and is usually caused by a fall on the palm of the hand, with a simultaneous forcible extension backwards of the hand. The second form is produced by a fall on the back of the hand with the wrist flexed. The latter form is very rare, so I shall confine my remarks to the first variety.

Causes.—It is usually caused by falling on the palm of the hand, with the wrist violently extended; the anterior common ligaments and flexor tendons being forcibly stretched, act on the anterior border of the carpal surface of the radius at right angles to its long axis, forcing it backwards so that the radius breaks almost transversely, or with a variable degree of obliquity from before backwards and upwards.

Signs and Symptoms.—1. Swelling over the posterior surface of the wrist, extending upwards on the forearm for about $1\frac{1}{2}$ inches, as the natural hollow over the wrist-joint behind is obliterated, and seems to be transferred to 1 inch or $1\frac{1}{2}$ inches upwards on the forearm. This is caused by the lower end of the lower fragment being displaced backwards with the carpus and metacarpus, and the tonicity of the muscles displaces the lower fragment outwards. This deformity disappears when moderate extension is made, and returns immediately when the extending force is withdrawn, *as formerly described by Dr. Colles himself.*

2. Swelling at the lower end of the radius in front, beginning close above the wrist joint and extending upwards from 1 to 2 inches on the anterior surface, the natural concavity of the radius at this part being replaced by a prominence.

3. The lower end of the styloid process of the radius is directed

towards the base of the metacarpal bone of the index finger, instead of being in a line with the metacarpal bone of the thumb, as in the normal condition.

4. Acute pain along the seat of fracture in front and behind and over the lower end of the ulna. The pain over the ulna is longest of being recovered from.

5. Inability to pronate or supinate the hand because of the severe pain caused by the attempt to do it; therefore the patient keeps the hand midway between pronation and supination, at the same time supporting the forearm across the chest with the sound hand.

6. By firmly grasping the lower end of the radius close to the carpal border by one hand, and at a point two or three inches upwards on the radius by the other hand, and making moderate extension with backward and forward movement, distinct mobility with occasional crepitus are felt between these points. This sign is conclusive evidence that a fracture exists.

The line of fracture in this accident is described as transverse from before backwards by Smith ("On Fractures in the vicinity of Joints," page 165, Dublin, 1847), Holmes ("Principles and Practice of Surgery," page 247, 2nd edition), and Packard (*American Journal of Medical Science*, January, 1879, page 124); but Professor Gordon, Belfast, who has carefully studied this subject, states "that of 27 specimens of this fracture in the Belfast Queen's College Museum 19 are oblique from before backwards and upwards, and 8 are directly transverse" ("On Fractures of lower end of Radius," page 4; Gordon, 1875).

In the recent forms of this fracture, produced artificially, the line of fracture is oblique from before backwards and upwards, and from within outwards and upwards, extending in front $\frac{1}{4}$ of an inch above the carpal border, and behind from $\frac{3}{8}$ to $1\frac{3}{4}$ of an inch above the carpal border. The lower end of the upper fragment is found to be convex from before backwards and upwards, and from within outwards and upwards, and the upper end of the lower fragment is concave in these directions.

Mons. Voillemier ("Archives Générales de Médecine, Mars, 1842) maintains that all fractures of the lower end of the radius (that is, within an inch of its carpal surface) are examples of impacted fracture, and considers that impaction of the upper into the lower fragment prevents crepitus from being detected in this form of fracture. Nélaton agrees with him in this view ("Éléments de Pathologie Chirurgicale," tome I., page 742). Smith ("On Fractures in the vicinity of Joints," pages 159, 160) denies that impaction does occur, and remarks that "until the result of the examination of recent specimens can be adduced in support of the theory of impaction I shall be inclined to believe that the impaction is only apparent, and that the compact tissue of the shaft is not found enveloped in bone, from its having penetrated the lower fragment at the

time of the occurrence of the injury, but because it becomes subsequently incased in osseous matter during the process by which the bony union of the fracture is accomplished."

Professor Gordon, in 1875, and his pupils since then, produced this fracture artificially, in the dissecting rooms of the Queen's College, Belfast, by forcibly extending the hand; and now the more important varieties of this fracture have been represented by artificial ones. On careful dissection of these fractures produced artificially the line of fracture begins, as a rule, from $\frac{1}{4}$ of an inch above the carpal border of the radius in front, and passes from within outwards and upwards, and from before backwards and upwards, for about an inch; the upper fragment being convex and the lower concave in these directions—viz., from within outwards and upwards, and from before backwards and upwards. In none of these specimens was impaction observed—in fact, it will be easily understood that no impaction can take place in this form of fracture, as its direction is oblique in the directions before mentioned, and because the force which produces this accident acts at right angles to the longitudinal axis of the radius, and *rotates* the lower fragment upwards and backwards on the lower end of the upper fragment.

Treatment.—Extend the wrist-joint, then apply Gordon's splint—by placing the bevelled portion of the anterior part of the splint a *little above the lower end of the upper fragment—to fix it*; now flex the wrist to an angle of 45° , and apply the posterior part of the splint to press forwards, and retain the lower fragment in that position. The splints must be well padded with spongiopiline, flannel, tow, or other soft material. Place a thick elongated pad of tow (about 1 inch \times $\frac{1}{2}$ \times $\frac{1}{2}$) against the outer border of the carpus longitudinally, pass a narrow strap through the ulnar part of the splint and over this pad, so as to press the carpus inwards towards the ulna. Fasten the splints by two more straps—one over the splints close to the lower end, and the other over the splints close to the upper end. Secure all by a bandage extending from the fingers to the elbow. Should severe inflammatory swelling of the hand occur during the first twenty-four hours, I remove the posterior part of the splint and readjust the padding. This may be repeated once weekly to watch the progress of the case, and any displacement of the fragments should it arise. In patients under fourteen years of age three weeks will be sufficient time to allow the splints to remain on; above fourteen years four or five weeks will be required. After removing the splints entirely envelope the hand and forearm in cotton wool, and lightly bandage for two or three weeks. See that the fingers are kept frequently moved from the second week after the accident to prevent prolonged stiffness, which may occur if this point is not attended to.

I have treated more than 150 cases in the Belfast Royal Hospital by applying Gordon's splint in the method above described, and, with few

exceptions, have found that the patients soon regained the *perfect use* of the forearm and hand. Several patients, especially those over fifty years of age, suffered from pain of a rheumatic character along the line of fracture in cold weather, but this was easily remedied by applying cotton wool and a bandage for a longer time after the splint was removed than in younger patients.

The accompanying diagram represents Gordon's splint accurately applied for the treatment of Colles' fracture.

PROFESSOR GORDON, after the paper was read, made the following observations:—The first thing to be determined is—What is Colles' fracture? I would define it as the usual fracture of the lower end of the radius, caused by falling on the palm of the hand, and very rarely extending above an inch from its lower end. In such cases, if the splint be properly applied, the lower end of the radius will be so *perfectly restored* that it will be difficult to say after five or six weeks which radius was fractured. If the radius be broken from an inch and a quarter to an inch and a half above the lower end, then both fragments are usually displaced inwards, diminishing the interosseous space. In such cases the splint will fail in correcting the displacements inwards, especially of the upper fragments, as it is held in this position by the extensor muscles of the thumb; but I do not know of any more efficient splint for the treatment of this variety of fracture. Indeed the question has often forced itself upon me as to the necessity of limitation of Colles' fracture, so as to give it a precise meaning, and draw the distinction between fractures of the lower end of the shaft of the radius and Colles' fracture. If the fracture be in the lower inch of the radius, and the term Colles' fracture be restricted to that inch, then the treatment of it will be found most satisfactory by my splint; but if the fracture be a little higher up, then a slight diminution of the interosseous space and transverse breadth of the forearm will occur, which neither the radial splint nor any other mode of treatment with which I am acquainted will correct. As to the age at which it occurs, I have seen it in persons from five to twenty-three years of age, and from twenty-five to thirty-five years it becomes very rare; and after fifty years, when senile atrophy begins to manifest itself, it becomes very frequent—so that even the slightest force may produce

it. As to the palmar swelling, it is mainly inflammatory, and is caused by the lower end of the upper fragment starting forwards and wounding the soft parts in front. By pressing the upper fragment backwards and the lower forwards, the apposition becomes perfect, all stimulus to inflammatory action is removed, and in many cases there is no swelling of the fingers nor tingling sensation, which was, before the introduction of my splint, considered a necessary accompaniment of Colles' fracture.

And as to the doctrine of impaction in this accident, all I can say on the subject is this—that I have seen and carefully examined several hundreds of the specimens of the artificial fracture, and in none, either produced by myself or by others, was there the slightest appearance of impaction—as the force exerted on the anterior border of the carpal surface, as stated by Dr. O'Neill, drives the lower fragment backwards whilst the lower end of the upper fragment, being in projectile force by the weight of the body, is forced forwards against and into the flexor muscles, and, therefore, I regard impaction almost as a mechanical impossibility; but as regards that form of fracture produced by falling on the back of the wrist, as referred to in the paper just read, I regard it as a truly impacted fracture, of which I have two admirable specimens in the Queen's College Museum.

DR. JOHN WALES did not think that the successful treatment of Colles' fracture was by any means confined to the use of the "Gordon splint."

DR. WALES (senior) thought there could be little doubt as to the great value of the Gordon splint in the treatment of Colles' fracture, as defined by Professor Gordon, if *correctly applied*. We see, however, even amongst well-informed surgeons, considerable difference in its mode of application. For example, it is frequently applied so as to make *lateral pressure* on the upper fragment of the radius, near the seat of the fracture, the result of which must be to aid the pronators in diminishing the interosseous space—thus creating a deformity which he had frequently seen as a sequence of this fracture. He thought, therefore, that the principles enunciated by Professor Gordon, rather than his splints, commend themselves most—for attention to the former will enable any intelligent surgeon to construct, out of materials at hand, an appliance which will produce satisfactory results, where such can be produced, by the Gordon splint. But this is not always the case, even with the latter. A suitable pad on the anterior aspect of the upper fragment, immediately above, but not on, the line of fracture; a pad on the end and posterior aspect of the lower fragment and carpus, secured by two plain splints—leaving the hand well flexed and the fingers free, to prevent stiffness from adhesions—would, he believed, meet all requirements in a simple manner.

DR. FAGAN approved of Nélaton's method of treatment instead of Professor Gordon's. He had not much experience of the practical application of the splints, and though he spoke more theoretically than

practically, he had given the matter some thought, and he must say he failed entirely to see the intention of the bevelled portion of the splint; nor could he see why the accident could not be as well treated by a piece of straight and flat wood properly padded. While he could see no use in this part of the splint, he thought that its convexity would be sure to produce some lessening of the interosseous space. From an anatomical study of the subject there was no necessity for it. He could not see how it would keep the radius and ulna from approaching each other, as was contended by those who advocated its use.

DR. A. M'CONNELL said he had considerable experience of Gordon's splint, and used it in all cases to which it was applicable. Its advantages are very evident in cases which have been neglected from two to three weeks. It is easily applied, retains its position without trouble, and effectually corrects any deformity. The splint is a great boon to the practical surgeon, and we owe a deep debt of gratitude to Dr. Gordon for his invention.

DR. WHITLA said he would refer to a point which was overlooked in the discussion—viz., the latest period in which one was justified in treating a fracture by the Gordon splint. He had applied it in one case where the accident was of four weeks' standing, in another of three and a half, and in several where the bones had been more than a fortnight fractured—all with great benefit. He thought there could hardly be a limit put to the time, as the splint, properly applied, would restore the natural condition of the parts so perfectly that, even if firm osseous union had taken place, great good would follow its use, as the alteration in the direction of the articular surfaces would be prevented even after a very long time. As regarded the use of the bevelled portion of the splint, he thought that there was hardly room for a difference of opinion when anyone looked at the beautiful natural antero-posterior curve in the perfect bone which he held in his hand. In case of fracture this concavity in the radius was almost always changed into a convexity. The inventor of the splint had early seen and recognised the vast importance of restoring this concavity, and he made the bevelled portion of his splint the keystone of his arch, and with consummate skill succeeded with the simplest contrivance to remedy a deformity that had previously baffled every surgeon. He had used, or seen the splints used in, he believed, over 200 cases, and in no instance where it was applied properly, had he seen any but highly satisfactory results follow; and he believed he was perfectly correct in saying that in nine cases out of ten no proof of fracture could now be detected upon the most critical examination.

DR. WORKMAN understood Dr. Fagan to speak of the bevelled portion of Dr. Gordon's radial splint as being used to make and keep up a lateral separation between the radius and ulna. Dr. Workman had always been

taught by Dr. Gordon that the bevelled portion was not intended for, nor was it capable of performing, such a duty, but was intended to keep the upper fragment of the radius in a plane posterior to that of the ulna; and he knew of no plan of padding which would be at all so effectual as the radial splint. Dr. Workman considered it unnecessary, as a rule, to place the little pad which Dr. O'Neill recommended on the outer side of the carpus, under the carpal strap, but wished to call attention to the advantage of placing a very thick, small pad on the back of the carpus. A pad so placed would keep the carpus with the lower fragment of the radius well forward, and this carpal strap, passing from the back splint to the prominent base of the metacarpal bone of the thumb, would exercise no injurious pressure on the veins. From his experience he had found it better, as a rule, not to keep the splint on for more than about four weeks, for in several cases where the splints had been left on for about six weeks, on removing them he found that, although there was no deformity, the fingers and wrist were very stiff—apparently from the hand being kept in one position for such a length of time—so much so that it was many weeks before the hand had perfectly resumed its functions. Dr. Workman thought that spongiopiline or felt was the best substance for padding the splint, but in hospital he was in the habit of using tow, only on account of its cheapness, and had found it to work admirably.

The PRESIDENT said:—I believe I am warranted in the statement, and I think I reflect the minds of the members, when I say that a more important practical and useful paper has not been brought before the Society for a long time than this one, to which we have been listening with so much attention, by Dr. O'Neill, on Colles' fracture and the Gordon splint, and which has been so ably supplemented, and minutely and clearly demonstrated, by Professor Gordon. I have had a lengthened and ample experience in the use of this splint, and I may say that its value cannot be exaggerated, neither can we bestow too much praise upon its admirable adaptation to the wrist and forearm, the great comfort experienced by the patient, and the very satisfactory results which have been found to follow from its proper application. I am free to state that, before this instrument was designed and came into use, I always experienced a want or a deficiency in the treatment of those cases of Colles' fracture which came under my care, as there was a greater or lesser degree of deformity following in each case; but I have invariably found the results to be most satisfactory since I began the use of it. When I first saw and carefully examined for myself the Gordon splint, it at once commended itself to my mind and judgment as a mechanical contrivance which was admirably suited to the object for which it was designed; and I cannot imagine anyone possessed of a mechanical mind or genius but who must see and acknowledge its undoubted merits.

And yet, with all this, I regret to say that, from what I have both seen and heard, there are those in the profession, far and near, who, as has been stated, require still to be educated into the use and proper application of this instrument. To prove this I shall offer you one or two instances. The first is that of a lady who came to me from a little distance. She had her arm in a sling, had on it the Gordon splint, and she was suffering much pain. I found, upon examination, she had received a Colles' fracture, and that the splint was actually applied upside down. No wonder, indeed, that she suffered so much. I need not say I altered the splint, and adjusted it so as to afford her much ease, and the case did well. The next case was told me by one of our young graduates (a Belfast student) who, while visiting a metropolitan school, dropped into a lecture-hall. The subject of *clinique* was Colles' fracture, and, after exhibiting the "Gordon splint," the lecturer proceeded to show how it should be applied. The young graduate could scarcely preserve his countenance when he saw it being applied in the wrong way, or upside down. He took the liberty of introducing himself afterwards to the lecturer, and correcting the error which to a Belfast man was a palpable blunder. As a few of the members are not agreed upon what constitutes a proper padding between the splint and the wrist and forearm, I may say that I have often applied it without any padding whatever, and when it is made to fit in size and shape, I have seen it to suit the purpose admirably. But before using it in this way I have found it necessary to round off the anterior sharp edge. This I would venture to suggest to Professor Gordon as an improvement under any circumstances. Allow me to conclude by saying that, if, as I assume it to be a test of genius to supply an admittedly great want by producing an original and very appropriate mechanical contrivance, and which has been furnished to us in the invention of this admirable work—then, I submit, to Professor Gordon, the author of this very valuable surgical appliance, the "Gordon splint," must be accorded the honour of being *an inventive genius*.

PRIAPISM IN LEUCÆMIA.

SALZER relates the case of a saddler, forty-six years of age, suffering from leucæmia, probably of splenic origin. Without apparent cause he became subject to priapism—at first only of short duration, but which afterwards became persistent for six weeks. It was then followed by the opposite condition, one of absolute impotence. Analogous cases of prolonged priapism are to be found in medical literature.—*Berl. klin. Woch.*, No. 11.

K. F.

CLINICAL RECORDS.

Clinical Notes in West Africa on (1) Dysentery, (2) Tænia Solium, (3) Alcoholism, and (4) Lichen Tropicus. By WILLIAM ALLAN, L.R.C.S.I.; First Prizeman in Practical Anatomy; Prizeman in Anatomy and Physiology; and formerly Prosector of Anatomy in the Queen's College, Belfast.

ONLY two cases of dysentery came under my care in West Africa during a recent visit there, though I had several cases of severe diarrhoea, which yielded to the ordinary remedies. One of the cases occurred in a Spanish sailor suffering from a severe attack of remittent fever, and which yielded to astringents on the fever remitting and quinine being administered. This case was, I believe, of the malarious variety of dysentery, as a marked improvement took place in the dysentery on the patient being cinchonised, the number of evacuations becoming diminished, and the case eventually terminating favourably.

The other case was that of an Englishman, the dysentery in his case being, I believe, a sequela of the fever from which he had been suffering for some time, and which terminated fatally on reaching the cold regions of the Channel, the change from tropical heat being too great for his state of extreme debility. I believe that in this case the system had been further undermined by his previous dietary, as it is difficult to obtain suitable provision necessary for a white in parts of Africa, and it is recorded on authority that the use of salt meat alone in Africa has sufficed to produce dysentery. Dr. Horton states that this scorbutic type is one of the worst forms of dysentery met with in the tropics, and that it is often the sequel of intermittent and remittent fever, as in this case. The particulars of the case are as follows:—

CASE I. *Ipecacuanha in Acute Dysentery.*—J. S., aged twenty-nine, boatswain, came under my care at Bonny, West Africa, suffering from the effects of fever and dysentery, and from which he was greatly reduced.

He presented some prominent symptoms of the latter disease—viz., tenesmus, which varied in severity; intense thirst, which induced him to drink great quantities of water; anorexia, and as the case progressed the dysenteric type of stools became very marked—not so much in the early stage, when I was able to improve his condition, from which he subsequently relapsed, but in the later stage, when the odour (odor dysentericus) from the evacuations became almost unbearable.

I did not from the first form a very favourable opinion of his case, as his general condition was extremely low, and though only twenty-nine

years of age, he presented an aged and worn aspect. For the evacuations I tried at first most of the astringents at my command—tinctures of opium and catechu, alum, dilute sulphuric acid, which had some power in the early stages but gradually failed.

I then turned my attention to ipecacuanha, recommended by Dr. Maclean in doses of 25 to 30 grains; and, as these doses caused emesis, I gave him, about ten minutes before each dose, 20 minims of the tincture of opium in half a wineglass of water, enjoining strict abstinence from all fluids for three hours after the medicine, with rest in the recumbent posture (back), and external warmth. This exercised a controlling and sedative action upon the stomach, and enabled him to retain the ipecacuanha, the good effect of the latter being seen in reducing the number of motions. During the early part of treatment he was placed under very unfavourable hygienic conditions, as all the beds in the hospital were occupied.

For diet I gave him food of the nature of arrowroot with a little port wine in it, strong soup, a little tea in the morning with sliced bread; and when I arrived at Funchal, Madeira, I was further able to augment his diet by fresh eggs, which I gave him raw in addition to above. He also received a small quantity of port wine daily.

Dr. Ringer, in treating of ipecacuanha in dysentery, advises much larger doses to be given—60 to 90 grains. Roberts, however, states that large doses are unnecessary, and liable to induce much depression. It might be well to take into consideration the existing condition of the patient, as a case like above, already exhausted by fever, &c., does not admit of much further depression.

Regarding the vomiting after the ipecacuanha, Dr. Maclean says “that if the vomiting is unmanageable after ipecacuanha, hepatic complication or overcharging of the system with malaria may be suspected.” Of the action of ipecacuanha, Dr. Horton states: “The effects of a large dose of ipecacuanha is very great. It acts directly on the liver and small intestines, producing a copious bilious stool, and this relieves the portal circulation; it induces diaphoresis, lowers the pulse, and produces a general sedative effect on the muscular fibre of the intestine, and this allays the spasmodic contractions incidental to acute dysentery.” Bearing in mind the torpid condition of the liver in tropical climates and frequently congested state of this organ, relief given to the portal circulation must in some measure extend to the rectum and descending colon—parts affected in dysentery.

CASE II. *Tænia Solium* treated by Turpentine.—A. B., aged thirty-five, by profession a cook, applied to me for relief, stating he had been under treatment in Lagos Hospital (W. Africa) for “tapeworm.” He believed that only portions of the worm had been removed, as he had not made any progress in the way of complete recovery.

His symptoms were the following:—Variable appetite, loss of flesh, continuous feeling of irritation in the bowels, itching of the anus; and he stated that on several occasions actual protrusion of the worm took place. I commenced treatment by placing him for twenty-four hours on liquid diet, at the termination of which time, and at about eight in the evening, I gave him a good dose of *oleum ricini*. In the morning, the oil having in the meantime acted well, I gave him spirits of turpentine in two-drachm doses. This treatment proved quite successful, and, with the exception of trifling hæmaturia, which disappeared in a day or two, he had no return of any of his symptoms, as I had him under my observation for more than two months afterwards, during which time he had gained much flesh.

CASE III. *Alcoholism*—W. G., first officer of a ship, came under my care at Sierra Leone. He stated that for two weeks he had taken little food, but a quantity of stimulant in the form of brandy.

His general condition was good, being of strong physique. He was quite on the verge of *delirium tremens*; face congested and bloated; a general tremulousness pervading his system; marked restlessness and uneasiness; furred and trembling tongue, anorexia, but his chief complaint was “total loss of sleep;” pulse soft. He had further a constant craving for drink, and while in this state used to be constantly asking for stimulants, which I firmly refused, there being no indication for their administration.

Being a strong subject, I commenced treatment by unloading his vessels by an ounce dose of sulphate of magnesia, keeping up a free action of the bowels during treatment. As he could not manage solid food, I gave him strong soup with pepper in it, and, each time he craved stimulant, a draught containing tincture of capsicum, bromide of potassium, and aromatic spirits of ammonia. Dr. Ringer speaks highly of capsicum in these cases, and recommends the above draught. As the chief indication was to procure sleep and a sedative action on the nervous system, for the former I gave him sleeping draughts of chloral hydrate, bromide of potassium, and camphor water, and for the latter 120 grains of the bromide of potassium daily. On carrying out this treatment for a few days, without the aid of stimulants, appetite, sleep, and natural functions returned.

IV. *Lichen Tropicus*.—This affection, better known as “prickly heat,” came frequently under my observation. It is recognised as a source of much annoyance to Europeans newly resident in the tropics, and more particularly to those who visit warm regions for the first time. Many are troublesomely affected, while others are comparatively free from the rash.

The eruption, consisting of small reddish papules, is more or less general. It is, however, most frequently observed high on the forehead,

on the forearms, wrists, sides and front of the neck (a very favourite seat), upper portion of back, and calves of the legs.

It accompanies free action of the skin, and is, therefore, well seen on partaking of a warm liquid, as tea or coffee. Those who visit the tropics regard it rather as a sign of being in good health than otherwise, and in a certain sense it may be taken as such. Sir Ranald Martin observes—"Prickly heat being rather a symptom than a cause of good health, its disappearance has been erroneously accused of producing much mischief," and "it certainly disappears suddenly sometimes on the accession of other diseases, but then there is no reason to suppose that its disappearance occasioned them;" or, in other words, when fever or ague invades the system the chill causes contraction of the skin, and acts as a repellant. Many who suffer from it do not adopt any treatment, but in two or three cases I tried the efficacy of an ointment composed of dilute hydrocyanic acid (B. P.), glycerine, and common ointment. Beyond temporary relief from the irritation I do not think it proved of any practical value. Besides it requires to be made up fresh and in small quantities, on account of the liability of the acid to evaporate, and it cannot be used on an abraded surface. Prevention is here of more value than cure, and most relief can be obtained by attention to diet, cleanliness, and clothing.

1. *Diet.*—Much will here depend upon the individual avoiding those articles which he finds produce the eruption.

2. *Cleanliness.*—Sponging the body over with cold water each morning is useful in many ways. I have found it to brace the system up for the day, and, further, to cleanse the skin from irritating matters. Special attention should be paid to such regions as the axillæ, &c., and, after washing, it is soothing to apply a little violet powder. This application of cold to the body may cause a recession of the eruption to take place. I have noticed it in my own person to disappear, but speedily to reappear after taking hot tea or coffee. It is well to avoid anything approaching a chill in tropical regions, but I think there may be allowed to be a difference between chill from exposure or damp clothing and that received from the impact of cold water on the surface followed by reacting friction to the skin. Sir R. Martin, however, says:—"Cold bathing and repellants are not to be recommended in this eruption, even in persons of robust constitution recently arrived in the country, and who are in the enjoyment of good health."

3. *Clothing.*—The dress is of much importance. Woollen shirts should be avoided, as they are hot and irritating to the skin, as I know from experience. Cotton next the skin will be found to be the best, and should be changed twice daily.

I am not aware of any internal remedy, but a teaspoonful of "pyretic saline" (Lamplough's) in half a tumblerful of cold water before breakfast may prove useful.

THE DOCTOR'S SOCIETY FOR MEDICAL OBSERVATION

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
April 24, 1880.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	880	910	20	31	37	2	30	41	16	37.1
Belfast, -	182,082	575	488	—	14	3	1	24	7	12	34.9
Cork, -	91,965	232	235	—	2	15	2	6	9	1	33.2
Limerick, -	44,209	108	104	—	—	—	—	—	8	6	30.6
Derry, -	30,884	75	76	—	—	—	—	5	2	1	32.0
Waterford, -	30,626	96	75	—	—	5	—	—	4	1	31.9
Galway, -	19,692	17	32	—	—	—	—	—	1	2	21.1
Sligo, -	17,285	42	42	—	—	—	1	—	1	3	31.6

Remarks.

The returns of mortality for Dublin continue to be extremely unfavourable as regards both the general and the zymotic death-rate. In the other chief towns of Ireland also a high mortality prevailed, except in Galway, where the death-rate was only 21.1 per 1,000 of the population annually. The mortality in twenty large English towns, inclusive of London (in which it was 22.1), was at the rate of 22.9 per 1,000 annually; it was 25.1 in Glasgow, and 25.0 in Edinburgh. In sixteen principal town districts of Ireland the average annual mortality represented by the registered deaths amounted to 33.8 per 1,000, or nearly 50 per cent. higher than the death-rate of the twenty English towns. In the Dublin registration district, when the deaths (24) of persons admitted into public institutions from without the district are deducted, the death-rate was 36.6 per 1,000. Within the municipal boundary of Dublin it was 39.8. In the Dublin district zymotic affections were

returned as the cause of death in no fewer than 210 instances, compared with an average of 137·4 deaths in the corresponding period of the preceding ten years. Measles, whooping-cough, fever, and diarrhoea—all showed a greatly increased fatality over previous weeks; smallpox and scarlatina remained about as fatal as before. Of the 41 deaths ascribed to fever, 15 were returned as due to typhus, 21 to typhoid or enteric, and 5 to “simple continued” fever. In Belfast measles and whooping-cough had much increased. The latter disease appears to be epidemic in Cork and Derry also. Scarlatina caused 5 deaths in Waterford. Diseases of the organs of respiration were again less destructive to life in Dublin. The deaths referred to this class of maladies numbered 151, against an average of 168·0 deaths in the corresponding period of the preceding ten years, and against 199 in the previous four weeks. They included 101 deaths from bronchitis (average=127·7) and 32 deaths from pneumonia (average=23·4). It will thus be seen that although bronchitis was less fatal, pneumonia was much more fatal than usual. At the close of the period the number of cases of the various epidemic diseases under treatment in the principal Dublin hospitals were—of smallpox 58, measles 7, scarlatina 41, typhus 30, enteric 23, and pneumonia 15. During the four weeks only 20 cases of measles were admitted to hospital, although the deaths from this disease were 31. This implies that the great majority of those who suffered from measles were treated in their own homes, to the detriment of the public health.

THE DEATH-RATE OF DUBLIN.

The eminently unsatisfactory state of the public health in Dublin is illustrated by the following extract from the Quarterly Summary of the Registrar-General for the quarter ending Saturday, April 3, 1880:—

“The number of deaths registered in the Dublin registration district during the quarter amounted to 3,165—1,537 males and 1,628 females—affording an annual ratio of 1 in 24·9, or 40·2 in every 1,000 of the population; omitting the deaths (92) of persons admitted into public institutions from localities outside the district the rate was 39·1 per 1,000. The average number of deaths registered in the first quarter of the ten years 1870–79 was 2,614, equivalent to an annual mortality of 33·3 per 1,000 persons. Thus the deaths during the past quarter show an excess of 551, or 21 per cent., over the average of the corresponding quarters of the last ten years, and a rate of mortality in excess of that average amounting to 6·9 per 1,000 of the population.”

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of April, 1880.*

Mean Height of Barometer,	-	-	-	29·861 inches.
Maximal Height of Barometer (on 29th at 11 p.m.),	-	-	-	30·527 „
Minimal Height of Barometer (on 5th at 8 p.m.),	-	-	-	29·188 „
Mean Dry-bulb Temperature,	-	-	-	47·4°
Mean Wet-bulb Temperature,	-	-	-	44·3°
Mean Dew-point Temperature,	-	-	-	40·8°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·256 inch.
Mean Humidity,	-	-	-	78·6 per cent.
Highest Temperature in Shade (on 19th and 20th),	-	-	-	58·6°
Lowest Temperature in Shade (on 27th),	-	-	-	37·3°
Lowest Temperature on Grass (Radiation) (on 14th),	-	-	-	32·5°
Mean Amount of Cloud,	-	-	-	52·2 per cent.
Rainfall (on 20 days),	-	-	-	1·832 inches.
General Directions of Wind,	-	-	-	W. & E.N.E.

Remarks.

A showery month, with a mean temperature slightly below the average of previous years. The amount of cloud was especially small at night. Until the 7th atmospheric depressions passed in a north-easterly direction across the N.W. of Europe in rapid succession, so that strong S. to W. winds and unsettled showery weather prevailed generally. On the day named a cyclonic system travelled quickly south-eastwards over Great Britain and France, and an anticyclone became developed over Scotland, causing northerly and easterly winds with dry weather and a searching air. On the 11th and 12th shallow depressions, or bourrasques, travelled from E. to W. along the southern edge of the area of high pressure in the north. As a result of this the weather was changeable and cold. From the 17th to the 24th mild, showery, and breezy weather was experienced. On the 21st heavy rains fell in Ireland and afterwards in Scotland in connexion with a disturbance which, with a secondary bourrasque, travelled north-eastwards over those countries. On the 25th an anticyclone began to form in the W. and N. The weather now became settled with northerly to easterly breezes and warm sunshine by day, calms and low temperatures at night. At the inland stations some sharp frosts were felt about this time, and the air was everywhere dry and searching. In Dublin the somewhat moderate rainfall of the month was distributed over as many as 20 days; the maximal fall in 24 hours was ·746 inch on the 15th. Hail fell in showers on the 4th, 5th, 6th, 7th, 22nd, and 25th. Thunder accompanied the showers on the 6th and 7th. The air was foggy on the 13th and 30th. A solar halo was seen on the 23rd, and lunar halos appeared on the evenings of the 18th and 20th.

THE DOCTOR
SOCIETY FOR
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PERISCOPE.

Edited by G. F. DUFFY, M.D., F.K.Q.C.P.

ON METHÆMOGLOBIN.

PROF. AXEL JÄDERHOLM, of Stockholm, calls attention to the fact that in 1876 he published the statement that methæmoglobin, the colouring matter produced by the spontaneous decomposition of blood or of its colouring matter, is a peroxidised hæmoglobin. This peroxyhæmoglobin gives two different spectra—one with four bands when in slightly acid or neutral solution, the other with three bands when in alkaline solution. It can be got by the action on the blood or on hæmoglobin of various agents which are not all oxidisers in the usual sense of the term, and whose mode of action is in many instances not clearly understood. It is, therefore, not on the mode of production of methæmoglobin that the author bases his view of its nature, but on the fact that when reducing agents are made to act on methæmoglobin in alkaline solution the primary result is always oxyhæmoglobin, which passes into reduced hæmoglobin only by the continued action of the reducing agent. This fact has been overlooked by other observers, either because they used the reducing agent in too large quantity so as to carry the process through all its stages too rapidly, or because they did not study the changes carefully enough as they occurred. At the date of the publication of these researches Hoppe-Seyler looked on methæmoglobin as a mixture of hæmatin and an albumin. Later he repudiated this idea, and showed that while by the action of reducing means hæmatin yielded hæmochromogen, methæmoglobin yielded (reduced) hæmoglobin. Hoppe denied that methæmoglobin contained more oxygen than oxyhæmoglobin, since, although not questioning its production by oxidising means, he found that it could be produced by reducing agencies, notably by the action of nascent hydrogen, as when palladium charged with hydrogen is brought into contact with oxyhæmoglobin. He held that methæmoglobin contained more oxygen than reduced hæmoglobin, but less than oxyhæmoglobin. Prof. Jäderholm has repeated the observations of Hoppe-Seyler. He has found that when a solution of pure oxyhæmoglobin is exposed to the action of palladium impregnated with hydrogen, the air being excluded, after a variable time, depending chiefly on the temperature at which the experiment is conducted, the oxyhæmoglobin is completely converted into methæmoglobin. A small quantity of ammonium sulphide was then introduced, and the change carefully watched with the spectroscope, the air being still excluded. It was seen that the spectrum of

oxyhæmoglobin soon reappeared, and only after some time gave place to that of reduced hæmoglobin. Thus methæmoglobin produced by the action of nascent hydrogen is more oxidised than oxyhæmoglobin; it constitutes, in other words, peroxidised hæmoglobin, and the conclusion of Hoppe-Seyler is refuted by the more careful performance of his own experiment. The author does not attempt to explain the action of the hydrogen in this experiment. He points out the importance which a knowledge of the properties of methæmoglobin may have in medico-legal inquiries, for this substance is found in blood-stains prior to the formation of hæmatin, and by a study of the different phases of the decomposition in different conditions it may become possible to determine approximately the age of the blood spot. [For the more recent researches of Hoppe-Seyler on this subject, see *The Dublin Journal of Medical Science*, Dec., 1878, p. 539. It seems to us doubtful whether the substance described by Jäderholm is the same as that named methæmoglobin by Hoppe-Seyler. This is characterised by a band in the red portion of the spectrum between C and D, nearer to the former. (*Physiologische Chemie*, 393.) Neither of the methæmoglobin spectra described and figured by Jäderholm agrees with this. The four-banded spectrum of the neutral solution is almost identical with that of hæmatin in oxalic acid holding ether; and the alkaline solution gives a band close to D, which is continued by a shady portion across D with the first of two bands lying between D and E, and which are almost identical in position with the bands of oxyhæmoglobin.—REP.]—*Nordiskt medicinskt Arkiv*, XI., 3.

J. M. P.

A NEW METHOD OF TREATING GONORRHOEAL OPHTHALMIA.

DR. DON, honorary professor in the University of Berne, relates a case of gonorrhœal ophthalmia which he treated with benzoic acid. Microscopical research having shown the existence of micrococcus or bacteria in nearly all virulent secretions, he premised in 1877 that purulent conjunctivitis, whether blennorrhagic or diphtheritic, follows the same law. Graham Brown maintained, in the *Archiv für experimentelle Pathologie*, Oct., 1877, that in diphtheria benzoate of soda is a most powerful antiseptic—more energetic even than hydrochlorate of quinia or salicylate of soda. Dr. Don accordingly applied it to purulent ophthalmia. Since then Neisser (*Centralblatt für die medicinischen Wissenschaften*, July 12, 1879) has established the existence of the micrococcus in gonorrhœal pus. In the case related, which Dr. Don saw in consultation, both eyes were affected, and threatening speedy destruction. He immediately prescribed a solution of benzoate of soda (1 in 20), one of tannin (1 in 10), and another (1 in 100) as an eyewash. The first two solutions were dropped into the eye every ten minutes, and the wash was used to remove any discharge as soon as it should appear between the lids. On the

seventh day he received the following report:—"The eyes are really well. They discharge some warm tears, and tolerate badly a half daylight; but, on the whole, the improvement is striking." A month later the patient came to see him; the eyes were perfectly well, but rheumatism prevented his getting about without difficulty. This method of treatment Dr. Don has employed for two years in all cases of ophthalmia neonatorum with a like success.—*Lyon Médical*, March 7, 1880.

K. F.

THE PATHOLOGY AND TREATMENT OF NIGHT-SWEATING IN PHTHISIS.

In a paper in the *St. Bartholomew's Hospital Reports* (Vol. XV., 1879), Dr. Lauder Brunton states, and gives ample reasons for, his belief that the night-sweats of phthisis, and the exhaustion which immediately follows them, are due to one and the same cause—namely, the accumulation of carbonic acid and products of tissue-waste in the blood. His view is that the respiratory centre becomes exhausted by the reflex irritation from the lungs and by frequent coughing, so that, especially during sleep, it no longer responds so readily as it should to the stimulus directly applied to it by carbonic acid in the blood. The result is that the blood becomes more or less venous, and to this venosity, and the consequent imperfect tissue-change, and not, as was formerly supposed, to the actual loss of fluid or sweat during sleep, are the nervous and muscular exhaustion and prostration observed in night-sweats to be attributed. The fact that increase of carbonic acid in the blood stimulates the secretion of sweat is proved, not only by experiment, but by the cold sweats which appear on the foreheads of dying persons just at the time that lividity begins to show itself in the lips, ear-lobes, and finger-tips. Acting on this theory, Dr. Brunton tried the effects in these cases of strychnia, a drug which is known to increase the excitability of the respiratory centre. Four cases are related, in all of which tincture of nux vomica, in doses of from five to twenty-five drops, given at bed-time, proved effectual in checking the sweating. It is evident, however, that by thus increasing its excitability, the respiratory centre is rendered more susceptible to reflex irritation, such as may be caused by tubercle in the lungs. In this way the cough in phthisis is sometimes increased. This disadvantage may sometimes be met by combining opium with the strychnia. Where strychnia does not appear to suit, atropia may answer perfectly. Atropia, as has been shown by von Bezold, has a marked action in stimulating the respiratory centre; it also acts upon the peripheral terminations of the sweat nerves, and lessens the irritability of the sensory nerves of the lung. Owing to the last-named action, it is likely to diminish cough and consequent exhaustion of the respiratory centre. Hyoscyamus acts similarly to atropia. Dover's powder has been shown by Dr. Murrell frequently to arrest the night-sweats of phthisis; Dr. Brunton

explains this by the action of the opium in lessening cough and consequent irritation and exhaustion of the respiratory centre, and of the ipecacuanha in powerfully stimulating this centre. Night-sweats in phthisis may occasionally be due to the stimulation of the sweating centres by increased temperature; under these circumstances quinine is probably the best remedy. The author concludes by saying that in the night-sweat of phthisis, atropia is probably the most powerful remedy we possess, but its use may be inconvenient, owing to its effect on the salivary glands. Dover's powder comes next on the list, but, if it should interfere with digestion, strychnia or nux vomica should be tried. Strychnia is most specially indicated in cases in which cough is not very distressing, but general debility with weakness of the circulation and digestion are prominent symptoms. Dr. Chas. S. W. Cobbold, who gives the foregoing abstract of Dr. Lauder Brunton's paper in the *London Med. Record*, February 15, 1880, states that he quite recently saw a patient, far advanced in phthisis, who volunteered the statement that she was never greatly troubled by both cough and night-sweating at the same time; when one of the symptoms was prominent, the other always remained in abeyance. The facts seemed to be at once explained by Dr. Brunton's theory of the pathology of night-sweats.

URÆMIA TREATED BY PILOCARPINE.

At the Société de Biologie, M. Leven communicated the case of a young girl attacked by parenchymatous nephritis induced by a chill, accompanied by œdema of the lower limbs, then by suppression of urine, and finally on the eleventh day of the disease by uræmia of a convulsive and comatose form. After the first convulsive attack a hypodermic injection of two centigrammes of nitrate of pilocarpine was given: this produced neither sweating nor salivation. A second injection had equally negative results; but shortly after the third injection there was a redness to the extent of two centimetres around the puncture, then sweating over the body, beginning on the forehead, abundant salivation trickling out from the mouth; after several attempts, vomiting of a yellowish fluid. Half an hour after the injection the patient was passing water under her. The vomited fluid contained traces of ammonia. In the evening there was a fourth injection, followed by sweating and sialorrhœa. 60 grammes of saliva contained traces of urea and 0.098 grammes of albumen. 350 grammes of urine contained 0.832 per cent. of albumen and 2.562 per cent. of urea. On the second day of this treatment (the twelfth of the disease) the patient had recovered her senses, and from this time the amelioration progressed; a fortnight afterwards the urine contained no albumen.—*L'Union Médicale*.

S. W.

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